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1965-39

Haystack Pointing System: Intercom

A. A. Mathiasen
J. D. Drinan
Editors

9 September 1965

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY

LINCOLN LABORATORY

HAYSTACK POINTING SYSTEM: INTERCOM

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EDITORS

Group 62

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ABSTRACT

The Intercom program in the Haystack pointing system provides communications between the pointing system and an experimenter at Haystack using the console keyboard-typewriter. A user at the Millstone or the West Ford site may also direct the pointing system via a teletypewriter. The structure of the program, the calling sequence for it, and the conventions affecting the operator are described.

Accepted for the Air Force
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Lt Colonel, USAF
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PREFACE

This document was written by C. W. Adams Associates, 575 Technology Square, Cambridge, Massachusetts, under subcontract to Group 62 of Lincoln Laboratory, as part of a programming effort on the Haystack Pointing System.

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I. INTRODUCTION

INTERCOM is an independent closed subroutine used in the Haystack Pointing System to provide communication between the operator of the system and the various programs which point the antenna. The routine also has the facility for allowing the operator of the West Ford antenna system to communicate with Univac 490 programs operating on that device. Programs which use INTERCOM specify the format for input and/or output by format specification tables referred to in the calling sequence. The basic input-output device used by INTERCOM is the console typewriter-printer provided with the Univac 490. However, when operating with the West Ford system, a standard teletypewriter (Model 28) is used instead for input-output.

All messages, both input and output, may be fully logged on the high-speed printer, using the Haystack system subprogram PRLOG, as well as on the console typewriter-printer. Thus, if the operator chooses to terminate printing on the console device, he will still have a complete record of all messages prepared by INTERCOM.

II. PROGRAM SPECIFICATIONS

Calling Sequence

From User Program:

```
RJP       U(INTERCOM)
U-TAG     XXXXX,YYYYY
Normal return
```

XXXXX = location of output specification table; and YYYYY = location of input specification table. If XXXXX = 0, no output activity will take place; if YYYYY = 0, no input will be expected; if both XXXXX and YYYYY = 0, control will be returned to the normal return after cycling once through the system. Whenever control is returned to the normal return, all input-output activity is completed.

From Master Control Program (MCP):

```
RJP       L(INTERCOM)
Attention return
Normal return
```

Communication with West Ford Teletypewriter

To indicate that the West Ford teletypewriter is to be used as the basic communication device with the Haystack console serving only as monitor, the Univac 490 operator must set Jump Key 3 on the computer control board. When INTERCOM finds this, it sets up for conversion of all information to or from teletype code and operates through an additional input-output channel. The 490 console is disabled for input but prints everything that is printed on the West Ford teletypewriter, both input and output. All special control keys perform the same functions on the West Ford and the Haystack keyboards.

Control Characters

Haystack	West Ford	Meaning
C/R	C/R (carriage return)	Terminates input, causes INTERCOM to evaluate input string for format validity, limits not exceeded, etc. If input is acceptable, causes * to be printed. If no input expected, terminates output.
?	?	Deletes current input and allows operator to start over. Causes the message NOT ACCEPTED to be printed.
□ (SPEC)	#	Forces limit check, i.e., if limit had been exceeded, this key will cause the input value to be accepted regardless of limit. Causes the message ACCEPTED to be printed.
(S) (or ↑)	(bell)	Attention symbol; causes transfer of control to attention return in MCP.

Operational Conventions

Any output information may be cut off at any time by hitting either a control character key or a data character key (except when parallel output on the high speed printer is unavailable if it was desired). A carriage return with indentation, or a line feed, depending on the action called for in the input specification table, will be issued followed by that character (or the appropriate message, if one of the control characters was hit). If input is expected, that character will be treated as the first character of the input string. If no input is expected, the character is ignored.

After a limit has been exceeded, a carriage return will cause no operation. The operator must hit either a question

mark to delete the entry or the SPEC key to force the answer in spite of the limit, or he may begin immediately to type the new answer which will automatically delete the previous entry. Once this has been done the carriage return key will again perform its normal function.

Up to 300 characters may be output in any one output message. Since the teleprinter page is only 72 character positions wide, however, the user must make provision for issuing his own carriage return and line feed.

The space character is printed but not recognized for numerical input. It is accepted, though, for alphanumeric character string input.

Carriage positioning conventions are designed so that it is always possible to distinquish information typed by the computer (output) from that typed by the operator (input). Output information always begins at the left margin of the log paper. It may extend over several lines, but each line should begin at the left margin (unless spaces are deliberately programmed into the output message, which is not recommended). Input information will always be started on the next line below the last line of output. The input message would begin either indented five spaces from the left margin or directly below the first space after the output message, depending on an indicator bit in the input specification table.

High-Speed Printer Output

If Jump Key 1 is not set on the computer control board, there is activated a series of routines that cause all messages, both input and output, to be printed in their entirety on the high-speed printer. (Note that the normal condition is for printer output; setting Jump Key 1 inhibits printer output.) This provides a complete log of operator activity since, even if the operator terminates an output message before completion on the console printer by commencing the input response, the entire message will be printed on the high-speed (line) printer. Indentation is identical to what would appear on the console printer, but vertical spacing is compressed to single spacing between lines.

An additional option is provided for using the various output formatting and conversion routines in INTERCOM as a means for conveniently printing internally-stored information on the line printer without printing on the console printer. This requires a call to INTERCOM with no input indicated and a special bit setting in the output specification table. This is further described in the section explaining the output specification entry.

Error Conditions

FORMAT ERROR - This message is typed by INTERCOM after the operator has completed typing the input message and hit carriage return if his input violated one of the requirements of the input specification. For example, if numeric input was specified and the operator typed an alphabetic character, or if an octal number was specified and the operator typed an 8 or 9, etc. After typing the error message, INTERCOM will give a carriage return, enough spaces to line up the new answer with the erroneous one, and retype as much of the input as correctly met the specifications. The operator may proceed to finish the input message correctly, again terminating with the carriage return. This process will be repeated as long as incorrect input is typed. An incorrect input may not be forced to be accepted but the entire input string may be deleted by typing a question mark.

PROGRAM ERROR - This message is typed by INTERCOM if an output message cannot be properly converted to the format specified by the output specification table, or if either of the specification tables is improperly coded. In short, it implies that the program which called INTERCOM is in error and there is nothing the operator can do to cause or correct this condition. INTERCOM will return control to the normal return of the MCP and the program which caused the error will not be resumed.

MAX LIMIT, MIN LIMIT - These messages are typed by INTERCOM if the upper or lower limit given in the input specification table is exceeded. The message will occur after the operator hits the carriage return terminating the input string. The operator then has the three options described above under Operational Conventions, namely, to start a new input string directly, to force the entry past the limit check, or to delete the previous entry. It is important

to note that once this error message has been typed, the location specified to receive the input entry has had that entry stored in it; therefore it is not possible to delete the entry, then hit carriage return and assume that the receiving location has the same contents as before the call to INTERCOM.

Specification Tables

Two distinct types of specification tables may be referenced by INTERCOM, each with its own rules for proper preparation. The output specification table consists of one or more separate output specification entries. If there are more than one, the routine will link together the output messages indicated and type each in its own format with a single call to INTERCOM. Inputs may not be linked in this manner; thus the input specification table will always consist of only one entry.

Output Specification Entry

The first word of the output specification will contain the format description of what is to be printed. The second word will contain, in the lower half, the location of the information to be output. The upper half of the word will contain:

All ones (77777), meaning there is nothing more to be printed.

All zeros (00000), meaning the following location contains the first word of the next output specification entry to be processed.

The location of the next output specification to be processed (must not be location 00000, 00001, 77776, or 77777).

If line printer output only is desired, this half-word in the first output specification entry of the table should contain either a -1 (77776) if there is nothing more to be printed, or a +1 (00001) if the following location contains the first word of another entry.

There is no provision for indicating printer-only operation in an entry which points to the location of the next entry.

The following format descriptions are acceptable for output specification entries:

Fβ means that a 60-bit floating-point value is to be printed in exponential form with β digits to the right and one digit to the left of the decimal point; for example, a format description of F6 would result in a printout of the form: 1.234567E-2.

XβBγ means that a 30-bit value is to be printed out as a fixed-point decimal number whose radix point is to the right of bit γ (the 30 bits being counted 0 to 29 from right to left), β numerals (β=1 to 9) expressing the fraction and as many digits as required for the integer portion. (γ=0 implies an integer.) The integer portion is followed by a decimal point whether or not a fractional portion follows.

D means that a 30-bit value is to be printed as a signed decimal integer with leading zeros suppressed.

O means that a 30-bit value is to be printed out as a 10-digit octal integer.

A means that the second entry will contain the location of one or more words containing a string of six-bit (Fieldata) alphanumeric characters which will be terminated by a word of all ones.

Input Specification Entry

The first word of the input specification table will contain the format description. The second word will contain, in the lower half, the location into which the input information is to be placed (converted into internal computer form). If this information requires more than one

word (double-length floating-point numbers or an alpha string of characters), this location is the first location of the information to be stored.

The upper half of the second word will contain two indicator bits to specify carriage positioning prior to input and whether or not limit checking is desired.

To specify a carriage return, line feed and usual identation, the upper half of the second word is coded as a one (00001). A line-feed-only specification is coded as zero. The input information would then begin immediately following the output, but on the next line.

To specify limit checking the upper half of the second word is coded as 10. No limit checking is coded as 00. Thus, to specify both carriage return and limit check the upper half would be coded as 11. If limit checking is indicated, there will be a third entry containing the lower limit and a fourth entry for the upper limit. If the converted number is double-length, the third and fourth entries will similarly be double-length.

The following format descriptions are acceptable for the input specification table:

F means that the input number is to be converted to a 60-bit internal format floating-point number. The forms of a number which may be input are:

```
57
5.7E+1
5.7E1
57.0
57.
.57E2
570E-1
```

XY means that a number is to be converted to a 30-bit fixed-point binary number with the radix point to the right of bit Y. The input format of the number is the same as for floating-point numbers.

D means that a signed decimal integer is to be converted to a 30-bit binary number. (Omission of sign implies positive.)

0 means that a signed octal integer is to converted to a 30-bit binary number. (Omission of sign implies positive.)

Y means that a YES or NO is to be typed next. If a YES is typed, a one will be placed in the location specified in the second entry; if a NO, a zero will be placed there.

Lα means that from 1 to α alphabetic letters (A to Z) are to be typed.

Nα means that from 1 to α numerals are to be typed.

Mα means that from 1 to α characters of any mixture are to be typed.

WΦ means that the character to be typed must be Φ where Φ is some specific character.

α may not exceed 300, (the size of the character buffer used for both input and output.)

Examples

To output a string of characters, such as a statement requiring no reply, an entry would be made to INTERCOM from the calling program by:

```
        RJP             U(INTERCOM)
        U-TAG           OUTSPEC,0
```

where OUTSPEC is the location of the output specification table.

The output specification table would be written in SPURT, as follows:

```
OUTSPEC     FD 0            A
            77777           MESSAGELOC
```

```
MESSAGELOC      FD 3            FIRST NUMBER
                77777           77777
```

To input only a number to be converted to floating-point and to store that number in XX, the calling sequence would be:

```
                RJP             U(INTERCOM)
                0               INSPEC

INSPEC          FD 0            F
                0               XX
```

To both output the statement above and input the previously specified number, the following entry could be made:

```
                RJP             U(INTERCOM)
                U-TAG           OUTSPEC, INSPEC
```

The output and input specification tables as written above would be used.

To link together several output messages with different formats and require another format for input, the coding below might be used. (This particular sequence of code would serve as an octal-to-decimal converter which would print the decimal equivalent of the previous input number and then await new input.)

```
                RJP             U(INTERCOM)             CALL INTERCOM
                U-TAG           SPECTBLOUT,SPECTBLIN
                JP              $-2                     RETURN TO TYPEOUT LAST
                COMMENT                                 INPUT AND AWAIT NEXT

SPECTBLOUT      FD 1            A                       ALPHA OUTPUT
                00000           DECMESSAGE              POINT TO MESSAGE
                FD 1            D                       DECIMAL OUTPUT
                NEXTSPEC        NUMBERLOC               POINT TO NUMBER

NEXTSPEC        FD 1            A                       ALPHA OUTPUT
                77777           HOCTMSG                 POINT TO MESSAGE

DECMESSAGE      FD 4            DECIMAL EQUIVALENT =
                77777           77777                   TERMINATE ALPHA STRING

HOCTMSG         FD 3            OCTAL NUMBER =
                77777           77777                   TERMINATE ALPHA STRING
```

```
NUMBERLOC   00000        00144

SPECTBLIN   FD 1         0                 OCTAL INPUT
            10           NUMBERLOC         LINE FEED AND LIMIT CHECK
            00000        00000             LOWER LIMIT = 0
            00000        01000             UPPER LIMIT = 1000
```

This coding could produce the following log on the console printer:

```
(a) DECIMAL EQUIVALENT = 100 OCTAL NUMBER =
(b)                                          678 FORMAT ERROR
(c)                                          67*
(d) DECIMAL EQUIVALENT = 55  OCTAL NUMBER =
(e)                                          2233 MAX LIMIT=0000001000
(f)                                          7654 MAX L
(g)                                                    ACCEPTED
(h) DECIMAL EQUIVALENT = 4012 OCTAL NUMBER =
```

Notes:

Line (b) - Digit 8 is not an octal digit, hence caused format error.

Line (e) - Number typed was larger than 1000, hence caused limit check error.

Line (f) - Number typed was larger than 1000, hence caused limit check error. Operator did not wait for entire error message to print, but hit SPEC key to force typein in spite of exceeding limit.

Line (g) - Message typed as result of hitting SPEC key.

III. SUBROUTINE DESCRIPTIONS

INTERCOM

Function

To print a message on the console printer (and/or the line printer) consisting of alphabetic information, fixed-point, floating-point, octal integer or decimal integer converted from internal computer representation, and to accept similar types of input from the console typewriter or a remote teletypewriter.

Calling Sequence

```
RJP     U(INTERCOM)
U-TAG   XXXXX,YYYYY
Normal  return

(XXXXX = location of output specification table)
(YYYYY = location of input specification table)
```

Input

Output and input specification tables (see Section II).

Output

Printed output on console printer, line printer, or remote teleprinter.

Converted values of input information stored in location given by input specification table.

Subroutines Used

PUTFORMINT, COMPROC, WESTOUT, WESTIN, HSPOUT.

Storage Areas Read

None.

Storage Areas Written

INTOUTSWO, CASESET, INTOUTSW, ACTIVITY
SPECTBLS, PRINTSW, BUFFCOUNT, BUFFER
KILLOUTSW, BUFSLOT

Method

INTERCOM interprets calling sequence and, through use of PUTFORMINT, prepares the output message string. It initiates the output buffer, calls WESTOUT if Jump Key 3 is set indicating that the West Ford console should also receive the output message, and calls HSPOUT if line printer output is also indicated (Jump Key 1 not set). If no output is indicated, INTERCOM sets the output completion bit in the ACTIVITY word and bypasses initiating any output buffer. Once all appropriate outputs are initiated, INTERCOM exits to an address set up by COMPROC, which must be called first for initialization. This address is normally in the MCP of the pointing system and control remains with the MCP until output is complete or terminated by the operator and the input, if indicated, is correctly accepted, converted, limit checked and stored in the user's area as performed by COMPROC. COMPROC then jumps back to the exit portion of INTERCOM, returning to the user program via the normal return. If neither input nor output is indicated, INTERCOM merely cycles once through the MCP and COMPROC, then returns to the user program without any teletypewriter action.

Error Conditions

For operator error conditions, see Error Conditions in Section II. Program error conditions cause a jump to the routine called ERROR with a 0 in the A register indicating an invalid call to INTERCOM. The message "PROGRAM ERROR XXXXX" is printed where XXXXX is the location of the call to INTERCOM.

COMPROC

Function

To initialize the interrupt answering routines, test for output or input completed, interpret, check, convert and store the input and return control to the user program when input is correct.

Calling Sequence

```
RJP  L(INTERCOM)
Attention return
Normal return
```

Input

ACTIVITY - a status register set by the interrupt answering routines.

BUFFER - an area containing the string of input characters.

Output

INTERCOM program messages indicating error conditions or valid input.

Subroutines Used

INFORMINT, WESTOUT, WESTIN, HSPACC, HSPGIN, HSPATTN, HSPNOTACC, SPACERITE, ERROR

Storage Areas Read

ACTIVITY, SPECTBLS, BUFSLOT, BUFFCOUNT

Storage Areas Written

SLOTSTOR, ACTIVITY, LOCININT (42), LOCOUTINT (62), LOCTTYIN (40), LOCTTYOUT (60), BUFSLOT
BUFFER

(Locations 40, 60, 42, and 62 are the hardware interrupt locations for input and output on channels 0 and 2, respectively.)

Method

COMPROC is called by MCP to respond to an operator's use of the control characters. It examines the ACTIVITY word to decide whether to exit immediately back to the MCP, process completed input data, exit to the attention return, delete input up to this point, etc. When all input is correct, COMPROC will jump back to the exit portion of INTERCOM, returning control to the user program.

Error Conditions

An error of any type causes a jump to the routine called ERROR with a code in the A register. The codes are interpreted as follows:

```
    0 - program error; invalid call to INTERCOM
   20 - maximum limit exceeded
   21 - minimum limit exceeded
other - format error; input cannot be correctly
          interpreted
```

INTOUT

Function

To answer output interrupts serving two types of output: 1) the output message strings prepared by INTERCOM or COMPROC; and 2) the single characters echoed back to the console printer by INTIN, the input interrupt answering routine. Routine serves both console printer and remote teletypewriter.

Calling Sequence

From location 62 (the Internal Output Interrupt location for channel 2) or location 60 (the location for channel 0) the instruction

```
RJP  INTOUT
```

is executed by the hardware when an output buffer on channel 2 or channel 0 is exhausted. The return from INTOUT releases the interlock set by the hardware interrupt and returns control to the user's program at the point at which the interrupt occurred.

Input

None.

Output

ACTIVITY - not changed if only single character input is being returned to printer; set to 4 if output message string is complete.

Subroutines Used

WESTOUT, WESTIN

Storage Areas Read

SPECTBLS

Storage Areas Written

ACTIVITY

Method

A switch setting INTOUTSWO determines which of the two types of output is being processed. If single character echoing is being performed, the routine immediately sets up another input buffer and exits. If message strings are being processed, the specification table is examined to see if carriage return and indentation is requested or only line feed and the appropriate spacing output characters are given (without further interrupt required). Then the ACTIVITY word is set to 4, an input buffer initiated and the routine releases interlock and exits.

Error Conditions

None.

INTIN

Function

To answer input interrupts for the console typewriter. Can terminate output and examine the input character to see if it is a control character. If a control character, it processes it accordingly setting the appropriate bit in the ACTIVITY word; if not, it stores the input character in the next available slot in the buffer and initiates an output buffer to echo the character back to the printer.

Calling Sequence

From location 42 (the Internal Input Interrupt location for channel 2) the instruction

```
RJP  INTIN
```

is executed by the hardware when the single word (character) input buffer connected to channel 2 becomes filled. The return from INTIN releases the interlock set by the hardware interrupt and returns control to the point at which the interrupt occurred.

Input

BUFIN - the single character buffer

Output

ACTIVITY - 10 if input complete (carriage return)
4 if output terminated
2 if deletion (question mark)
1 if attention (attention symbol)

Subroutines Used

WESTOUT, WESTIN, ERROR

Storage Areas Read

BUFIN, SPECTBLS, BUFSLOT, BUFFER

Storage Areas Written

ACTIVITY, BUFSLOT

Method

If output is in progress when INTIN is called, that output is terminated and either a carriage return, line feed and indentation is given or only a line feed depending on the input specification table. Then the input character is examined. If it is one of the control characters, the appropriate bit is set in the ACTIVITY word and the routine exits after re-initiating the input buffer. If not a control character, it is stored in the next slot in the BUFFER, BUFSLOT is incremented, and the character is output back to the console printer and to the remote teletypewriter if West Ford communication is indicated.

Error Conditions

If BUFSLOT, when incremented, exceeds the limit on the BUFFER size, currently set to 300_{10}, the effect is as if a carriage return had been issued. Presumably, a format error will be detected by COMPROC since no input specification allows for more than 300 characters.

TTYININT

Function

To answer input interrupts for the remote teletypewriter (at West Ford). The routine interprets the character, echoes it, sets a case switch if the character is a shift, otherwise translates the character to Fieldata code and passes it on to INTIN for normal input character processing.

Calling Sequence

From location 40 (the Internal Input Interrupt location for channel 0) the instruction

```
RJP  TTYININT
```

is executed by the hardware when a single word (character) input buffer connected to channel 0 becomes filled. The return from TTYININT releases the interlock set by the hardware interrupt and returns control to the point at which the interrupt occurred.

Input

TTYINWD - the single character buffer.

Output

See output of INTIN.

Subroutines Used

INTIN

Storage Areas Read

TTYINWD, TTYTBL

Storage Areas Written

BUFINWD

Method

The teletype to Fieldata translation table has letter shift characters in the lower portion of the table and figure shift characters in the higher portion. The base address of the table is set to one or the other of these portions by the corresponding shift character after which the Fieldata character corresponding to any teletype character may be accessed directly. This character is placed in BUFINWD, simulating the hardware function of filling the buffer and allowing INTIN to process the character exactly as though it came from the console typewriter.

Error Conditions

None.

WESTOUT

Function

The West Ford teletypewriter output routine tests Jump Key 3 to see if communication is desired with the West Ford device. If so, it translates the output message string prepared by INTERCOM or COMPROC from Fieldata to teletype code, inserting shift characters as necessary and initiates an output buffer to West Ford, with or without monitor as the instruction preceding the call indicates.

Calling Sequence

```
IN   KEYIN, W(BUFINWD), MONITOR (Optional)
OUT  KEYOUT, W(ANYTHING), MONITOR (MONITOR optional)
RJP  WESTOUT
Normal return
```

Input

Output buffer of Fieldata characters indicated by OUT instruction preceding call.

Output

Printed output on remote teletypewriter.

Subroutines Used

None.

Storage Areas Read

TTYTBL.

Storage Areas Written

FDBUFCNT, TTYBUF.

Method

The two instructions preceding the call to WESTOUT are interpreted as follows: if the instruction preceding the call is an OUT with MONITOR, the OUT instruction on channel 0 will likewise be with MONITOR, otherwise the OUT will be without MONITOR. The buffer word indicated by that instruction will be used to show the location and size of the Fieldata buffer to be translated. The instruction preceding that (two prior to the RJP) is examined to see if it is an IN; if so, a corresponding IN is initiated on channel 0.

Error Conditions

None.

INFORMINT

Function

To interpret the input specification table, test the completed input message for proper format, convert to internal computer word representation, store in the user's area, and check for the value within the limits given.

Calling Sequence

```
RJP  INFORMINT
0    location of input spec table
Error return
Normal return
```

Input

BUFFER - the string of characters containing the input message.

The input specification table indicated.

Output

The converted value of the input message stored in the user's area.

Subroutines Used

GREEKCONV

The following routines are called corresponding to the format character given in the input specification table:

Format Character	TEST	STORE	LMTCHK
F	FLOATIN	FLTSRT	SLTLMT
X	FIXIN	NUMSTR	FIXLMT
D	DECIN	NUMSTR	DECLMT
0	HOCTIN	NUMSTR	HOCTLMT

Format Character	TEST	STORE	LMTCHK
Y	YESIN	NUMSTR	NOLMT
L	INPUTLA	STRING	NOLMT
N	INPUTNA	STRING	NOLMT
M	INPUTMA	STRING	NOLMT
W	SPECIN	NUMSTR	NOLMT

Storage Areas Read

INCODTBL, INTEGER.

Storage Areas Written

BUFSLOT.

Method

The routine examines the input specification table to see if characters other than the format character are required to specify gamma (the binary point of a fixed-point number), the number of characters to be input, or the specific character to be typed. If so, these numbers are converted with GREEKCONV and passed on (by being left in the A-register) to the appropriate TEST routine. The appropriate STORE routine stores the converted values in the location(s) indicated in the specification table, after which, if limit checking is indicated, they are tested by the corresponding LMTCHK routine to see if they are within the given limits.

Error Conditions

1) Errors may be passed on from the TEST routine and the LMTCHK routine. The contents of the A-register are unchanged so that the individual routines determine the type error.

2) An error return from GREEKCONV causes a 0 (program error) to be placed in the A-register before returning to the error return.

3) If a format character other than those allowed is specified, a program error is indicated.

PUTFORMINT

Function

To interpret the Output Specification Table, linking individual entries and causing the internal representations to be converted to the appropriate output form and placed in the output buffer, one character per word.

Calling Sequence

```
RJP  PUTFORMINT
0    location of output spec table
Error return
Normal return
```

Input

The output specification table indicated.

Output

BUFFER - the string of characters comprising the output message.

Subroutines Used

GREEKCONV, PUTPREP.

Storage Areas Read

PUTCODTBL, CHARO, INTEGER.

Storage Areas Written

None (BUFFER through use of PUTPREP).

Method

A loop is established for processing each specification entry. Within that loop the format character determines whether there are additional characters in the word for specifying beta (the number of fractional digits to print) or gamma (the binary point of a fixed-point number). If so, they are converted from Fieldata to decimal and given to the calling sequence of PUTPREP. The PUTPREP routine actually calls the conversion routines and unpacks the output characters for storing in the buffer. PUTFORMINT then tests for more entries in the specification table and either repeats the loop or exits accordingly.

Error Conditions

Any error condition, whether generated by subroutines or by PUTFORMINT coding, causes an exit to the error return with a 0 (program error) in the A-register.

PUTPREP

Function

To call the appropriate output conversion routine, unpack the resultant characters and store them with sign, decimal point, etc., in the output buffer.

Calling Sequence

```
RJP    PUTPREP
U-TAG  XXXXX, YYYYY
Error return
Normal return
```

where XXXXX = location of information to be converted and
YYYYY = code, gamma, beta as follows:

```
000 CCC GGG GGB BBB
    code gamma beta
```

Input

Information in calling sequence.

Output

BUFFER - the string of characters containing the output message.

BUFFCOUNT - a count of the number of characters in BUFFER.

Subroutines Used

COTFLT, COFFIX, BINDECINT, BINOCTFLD, ZROSUPINT, BUFFSTORE.

Storage Areas Read

SIGN, IOINTEGER, IOFRACTION, BETA, EXPSIGN, IOEXPONENT INTEGER.

Storage Areas Written

CODE, GAMMA, BETA, BUFFER, BUFFCOUNT

Method

Completely separate paths are followed for each of the five possible output format characters (codes). Straight Fieldata output is converted within PUTPREP; all other conversions are done with subroutines.

Error Conditions

Any error condition causes an exit to the error return with a code in the A-register as follows:

11 - output message exceeds size of buffer
25 - Format Character not valid
other - as returned from conversion routine

INPUTLA,INPUTNA,INPUTMA

Function

To test the input string of characters for proper class: alphabetic, numeric or mixed, respectively.

Calling Sequence

```
RJP  INPUTXA
Error return
Normal return
```

with the maximum number of characters to be tested in the A-register

Input

None.

Output

The appropriate return.

Subroutines Used

INPUTA.

Storage Areas Read

None.

Storage Areas Written

None.

Method

An index register is loaded with the address of a word containing the upper and lower limits of the character codes within the class indicated by the particular routine. This word is given to INPUTA to test the input string in general.

Error Conditions

If the string contains a character not between 05 and 37 for INPUTLA or between 57 and 71 for INPUTNA, the appropriate error return is given.

INPUTA

Function

To test a string of input characters falling within a pair of Fieldata codes given by the calling routines.

Calling Sequence

```
        ENT B6  ADDRESS
        RJP     INPUTA
        Error return
        Normal return

ADDRESS XX      YY
```

where XX is the upper limit and YY the lower limit of the class of characters being tested.

Input

BUFFER+(BUFSLOT).

The A-register containing the maximum number of characters to be tested.

Output

A setting of B6, BUFSLOT.

Subroutines Used

None.

Storage Areas Read

BUFFER, BUFSLOT

Storage Areas Written

BUFSLOT.

Method

The input buffer beginning at BUFFER + (BUFSLOT) is tested character by character for a space which is ignored, a carriage return which is cleared in the buffer and triggers the normal return, or a character within the limits specified. Any character other than these causes an error return.

Error Conditions

1. A 10 in the A-register indicates too many characters in the string prior to the carriage return. B6 contains a one.

2. If a character is not within the specified class, the error return is given with a zero in B6.

DECIN, HOCTIN

Function

To test the input string for proper decimal or octal format and convert to internal code.

Calling Sequence

RJP DECIN or RJP HOCTIN
Error return
Normal return

Input

None.

Output

The appropriate return and the converted number in INTEGER.

Subroutines Used

NUMIN.

Storage Areas Read

None.

Storage Areas Written

BINLMT, CONVERT.

Method

The appropriate BCD limit, 10 for HOCTIN or 12 for DECIN, is placed in BINLMT and the appropriate conversion routine, INTOCTBIN or INTBCDBIN, respectively, placed in CONVERT. Then the common routine NUMIN is called which actually tests the characters and calls the proper conversion routine.

Error Conditions

1. The error return from DECIN leaves a 07 in the A-register.

2. The error return from HOCTIN leaves a 06 in the A-register.

NUMIN

Function

To test and convert a string of input characters in either octal or decimal form.

Calling Sequence

```
RJP  NUMIN
Error return
Normal return
```

Input

BINLMT, CONVERT, BUFFER+(BUFSLOT).

Output

INTEGER.

Subroutines Used

INTOCTBIN or INTBCDBIN.

Storage Areas Read

BINLMT, CONVERT, BUFFER, BUFSLOT.

Storage Areas Written

SIGN, IOINTEGER (2), NUMDIG.

Method

The string is first examined for a sign character which is used to set the register SIGN to 1 if minus or to 0 if plus. If no sign is found, the register SIGN is set to 0 and the rest of the string examined. Spaces are ignored. Each number is converted from Fieldata to pure BCD, tested against the maximum limit given in BINLMT, and then packed into IOINTEGER, a 2-register common storage area. The appropriate conversion routine converts the number and leaves it properly signed in INTEGER.

Error Conditions

If any format condition is not met or if the conversion routine indicates an error, the routine exits to the error return.

SPECIN

Function

To test the input string for a particular character.

Calling Sequence

```
RJP  SPECIN
Error return
Normal return
```

with the Fieldata code of the character to be tested for in the A-register.

Input

BUFFER+(BUFSLOT)

Output

INTEGER.

Subroutines Used

None.

Storage Areas Read

BUFSLOT, BUFFER.

Storage Areas Written

INTEGER.

Method

Spaces are not permitted; the character in BUFFER+(BUFSLOT) must be precisely that given in the A-register and the next character must be a carriage return. The proper character is placed in the common storage register INTEGER.

Error Conditions

1. If the input buffer size is exceeded, the error return is made with a 01 in the A-register.

2. If the character was not properly entered, the error return is made with a 10 in the A-register.

YESIN

Function

To test the input string for a yes or no answer.

Calling Sequence

```
RJP  YESIN
Error return
Normal return
```

Input

BUFFER+(BUFSLOT).

Output

INTEGER (= 1 for yes, 0 for no).

Subroutines Used

None.

Storage Areas Read

BUFFER, BUFSLOT.

Storage Areas Written

INTEGER.

Method

Spaces are ignored. Only the first character is tested for Y or N, after which anything may be typed.

Error Conditions

If neither a Y nor an N is typed as the first non-space character, the routine exits to the error return with an 11 in the A-register.

FLOATIN, FIXIN

Function

To test the input string for proper exponential format and convert to either floating- or fixed-point internal form.

Calling Sequence

```
RJP  FLOATIN or RJP  FIXIN
Error return
Normal return
```

Input

None.

Output

The appropriate return.

Subroutines Used

FXPREPREN, CINFLT or CINFIX

Storage Areas Read

None.

Storage Areas Written

None.

Method

FXPREPREN is a common routine for testing input format, after which the appropriate conversion routine is called.

Error Conditions

If either of the subroutines indicates an error, the routine exits to the error return.

FXPREPREN

Function

To test the input string for proper exponential format and get the information into common storage areas.

Calling Sequence

```
RJP  FXPREPREN
Error return
Normal return
```

Input

BUFFER

Output

EXPSIGN, SIGN, IOINTEGER(2), IOFRACTION(2), IOFRACTION(2), IOEXPONENT.

Method

Each portion of the input number is examined separately, beginning with the sign (the absence of which indicates a plus), followed by the integer portion terminated by a decimal point, then by the fraction terminated by an E, then by the sign of the exponent, and finally by the magnitude of the exponent, terminated by a carriage return.

Error Conditions

Tests are made for the digit count of the integer or fraction portion not exceeding 10, for the exponent not exceeding 40, for all characters to be valid digits, etc. Any violation causes an exit to the error return.

BINDECINT

Function

To convert the value in INTEGER from binary to decimal in Fieldata output form.

Calling Sequence

```
RJP  BINDECINT
Normal return
```

Input

INTEGER.

Output

IOINTEGER(2), SIGN

Subroutines Used

None.

Storage Areas Read

INTEGER

Storage Areas Written

IOINTEGER(2), SIGN

Method

Repeatedly divide the quantity in INTEGER, having been forced positive, by 12_8 and store the remainder in the appropriate digit position of IOINTEGER or IOINTEGER+1.

Error Conditions

None.

INTOCTBIN

Function

To convert the value in IOINTEGER from octal input form to internal binary form.

Calling Sequence

```
RJP  INTOCTBIN
Error return
Normal return
```

Input

IOINTEGER(2), SIGN.

Output

INTEGER.

Subroutines Used

None.

Storage Areas Read

IOINTEGER(2), SIGN.

Storage Areas Written

INTEGER.

Method

Each character is tested for the presence of an 8 or 9, which results in an error condition. If not, the good characters are packed into a register that is stored in INTEGER.

Error Conditions

Non-octal digits result in an exit to the error return.

INTBCDBIN

Function

To convert a value in IOINTEGER from integer decimal form to internal binary.

Calling Sequence

```
RJP  INTBCDBIN
Error return
Normal return
```

Input

IOINTEGER(2), SIGN.

Output

INTEGER.

Subroutines Used

None.

Storage Areas Read

IOINTEGER(2), SIGN.

Storage Areas Written

INTEGER.

Method

Multiply successively higher order digits by 12_8 and add to the previous partial product.

Error Conditions

An overflow in the multiplication process indicates that the value in IOINTEGER was too large to convert to single-word binary and causes an exit to the error return.

FRABCDBIN

Function

To convert a value in IOFRACTION from fractional decimal form to internal binary.

Calling Sequence

```
RJP  FRABCDBIN
Normal return
```

Input

IOFRACTION(2), SIGN.

Output

FRACTION.

Subroutines Used

None.

Storage Areas Read

IOFRACTION(2), SIGN.

Storage Areas Written

FRACTION.

Method

Multiply successively higher order digits by $(10/12)_8^n$ and add to the previous partial product (where n is the decimal power of 10 of the digit being multiplied).

Error Conditions

None.

BINDECFRA

Function

To convert a value in FRACTION from internal binary form to fractional decimal form suitable for output.

Calling Sequence

```
RJP  BINDECFRA
Normal return
```

Input

FRACTION.

Output

IOFRACTION(2), SIGN.

Subroutines Used

None.

Storage Areas Read

FRACTION.

Storage Areas Written

IOFRACTION(2), SIGN.

Method

Multiply the fraction by 10 (B1), each time converting the high-order four bits to output form and accumulating them in IOFRACTION.

Error Conditions

None.

SUPZRO

Function

To suppress leading zeros in the area defined by the calling sequence, converting them to blanks, but leaving one zero if the entire value is zero.

Calling Sequence

```
RJP     SUPZRO
U-TAG   AREA,XX     (XX = number of words)
Normal return
```

Input

Area given by calling sequence.

Output

Same area.

Subroutines Used

None.

Storage Areas Read

Area given by calling sequence.

Storage Areas Written

Same area.

Method

Test leading digits for zero, clearing each until a non-zero digit is found or the area exhausted. If the latter, force a single zero in the least significant digit position of the area.

Error Conditions

None.

COFRND

Function

To round off the value in IOINTEGER and IOFRACTION to BETA deeimal places.

Calling Sequence

```
RJP  COFRND
Normal Return
```

Input

IOINTEGER(2), IOFRACTION(2), BETA.

Output

IOINTEGER(2), IOFRACTION(2)

Subroutines Used

None.

Storage Areas Read

IOINTEGER(2), IOFRACTION(2), BETA.

Storage Areas Written

IOINTEGER(2), IOFRACTION(2).

Method

The BETA+1st digit is tested for five or greater. If not, it is cleared and the fraction replaced as is; if so, the next higher order digits are tested for 9's to see if the carry will propagate upwards. This process continues from IOFRACTION through to IOINTEGER until a digit less than 9 is found at which point 1 is added to it and the value cleared up and prepared for output with BETA digits, zero or greater in IOFRACTION.

Error Conditions

None.

COFFIX

Function

To convert the fixed-point value indicated by the calling sequence to output fixed point format with BETA decimal places printing.

Calling Sequence

```
RJP     COFFIX
U-TAG   ADDRESS,GAMMA
Normal return
```

Input

Value in address given in calling sequence.

Output

IOINTEGER(2), IOFRACTION(2), SIGN.

Subroutines Used

BINDECINT, BINDECFRA, COFRND, SUPZRO.

Storage Areas Read

Address given in calling sequence.

Storage Areas Written

SIGN, INTEGER, FRACTION, IOINTEGER(2), IOFRACTION(2) (by subroutines).

Method

The value is made positive and its true sign temporarily stored. It is then separated into its integer and fractional portions by the binary point (GAMMA) given in the calling sequence. Each is separately converted to output form and the entire value rounded to BETA decimal places with leading zeros suppressed.

Error Conditions

None

CINFIX

Function

To convert the input value in the various storage registers to a single fixed-point binary quantity with the binary point given by the calling sequence.

Calling Sequence

```
RJP     CINFIX
U-TAG   ADDRESS,GAMMA
Error return
Normal return
```

Input

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN.

Output

The address given in the calling sequence.

Subroutines Used

INTBCDBIN, FRABCDBIN.

Storage Areas Read

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN, INTEGER, FRACTION, NOINTS.

Storage Areas Written

INTEGER, FRACTION (by subroutines); address given in calling sequence, FXCODE.

Method

After masking off the Fieldata code bits from all numbers, the exponent is converted to binary. The values in IOINTEGER and IOFRACTION are shifted right or left (depending on the sign of the exponent), the number of digit positions indicated by the exponent. Then the integer and the fractional portions are separately converted to binary through the use of subroutines and the results shifted together the number of places given by the binary point (GAMMA) in the calling sequence. This quantity, after adjustment for sign, is then stored in the address given in the calling sequence.

Error Conditions

If overflow occurs indicating that the integer portion is too large to fit into the number of bit positions available, the routine exits to the error return.

COTFLT

Function

To convert the value indicated by the calling sequence from internal floating-point form to output exponential form.

Calling Sequence

```
RJP     COTFLT
U-TAG   ADDRESS,0
Error return
Normal return
```

Input

Floating-point value in ADDRESS (2).

Output

IOINTEGER+1, IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN.

Subroutines Used

FLTPT, BINDECINT, BINDECFRA, COFRND, SUPZRO.

Storage Areas Read

EXPONENT, FPFRACTION.

Storage Areas Written

INTEGER, FRACTION, EXPONENT, FPFRACTION, IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN, SINTEMP.

Method

The value indicated by the calling sequence is stored as a positive quantity in the common area EXPONENT and FPFRACTION along with temporary storage of the true sign. Separate paths are entered depending on the sign of the exponent; but as the functions are similar, only the positive exponent path will be described.

The number is tested against the floating-point representation of 10^{10} and repeatedly divided by it with corresponding adjustment of IOEXPONENT until it is less. Then it is tested against a table of floating-point representations of powers of ten and divided by the highest one which is less than it, thus making the number in terms of units only. Now the value can be shifted an amount equal to the exponent minus the base (40000) to separate the integer and fractional portions which are each converted separately to output format. The resultant input-output values are rounded to BETA decimal places and zero suppressed. The IOEXPONENT is then converted to decimal for output.

Error Conditions

If the resultant value of IOEXPONENT is greater than 40, the routine exits to the error return.

CINFLT

Function

To convert the input value in the various common storage registers to a floating point number stored in EXPONENT and FPFRACTION.

Calling Sequence

```
RJP  CINFLT
Error return
Normal return
```

Input

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN.

Output

EXPONENT, FPFRACTION.

Subroutines Used

INTBCDBIN, FRABCDBIN, FLTPT.

Storage Areas Read

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN, INTEGER, FRACTION

Storage Areas Written

INTEGER, FRACTION (by subroutines), EXPONENT, FPFRACTION.

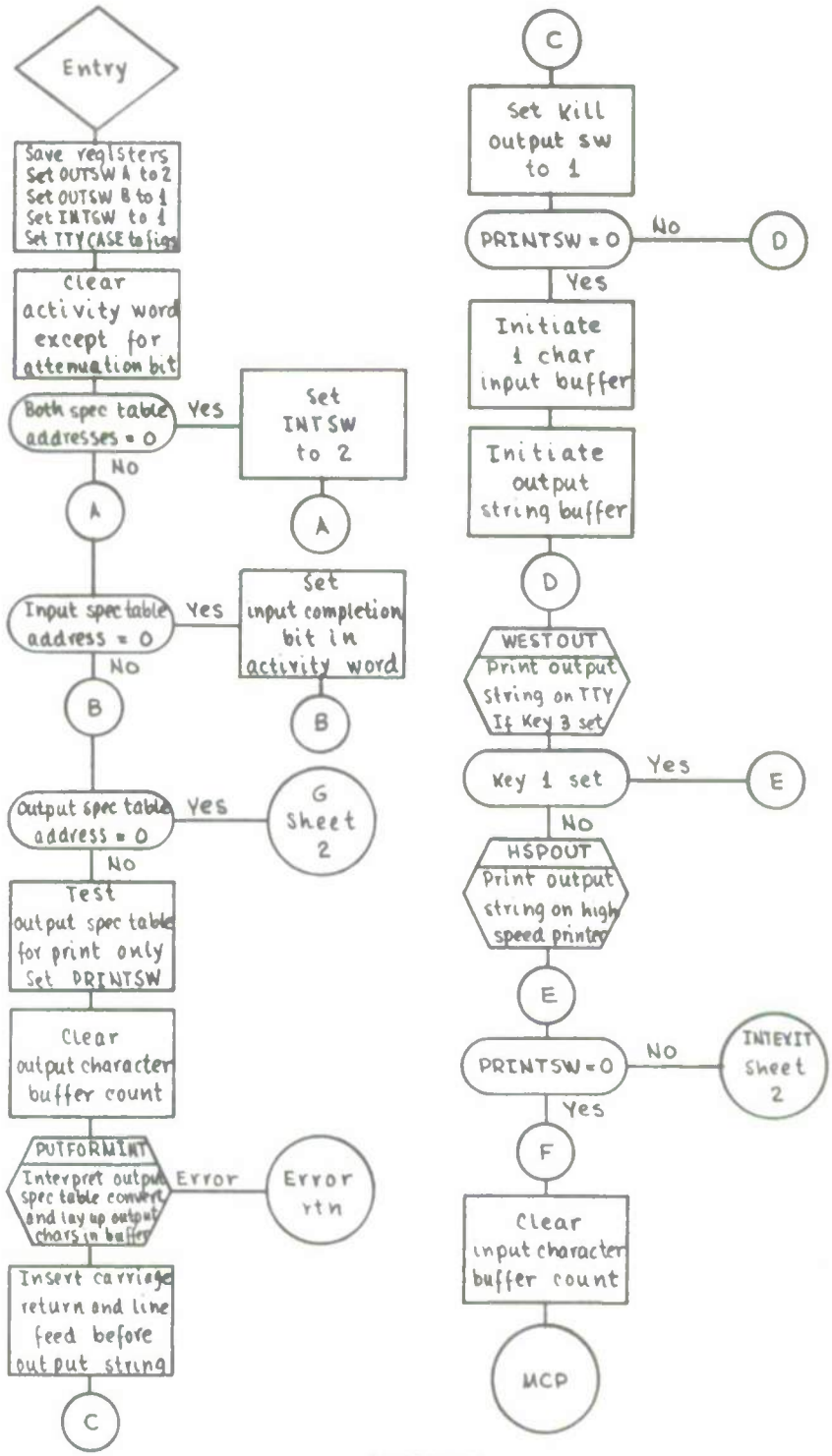
Method

The input integer and fraction are separately converted to internal binary form after being stripped of Fieldata code bits. The resultant words are normalized by shifting together with a base exponent increased by one for each position shifted out of the integer and into the fraction. Alternatively, if the value were a pure fraction, the exponent would be decreased by one for each bit position the fraction is shifted left until it is normalized. This normalized result is rounded off with appropriate exponent adjustment and stored in a floating-point area.

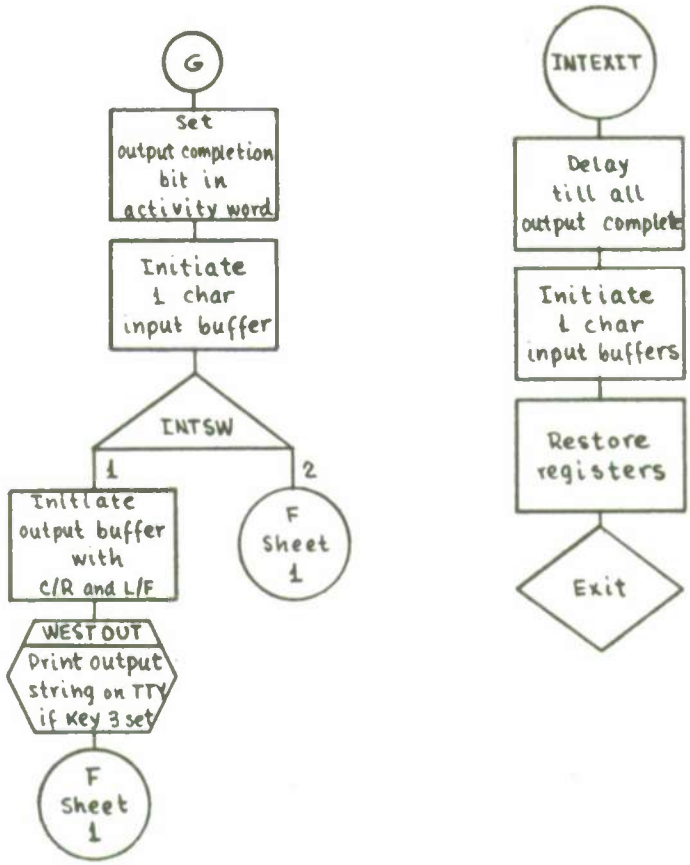
Now the input exponent may be applied through use of the floating-point subroutines. This exponent is separated into the tens and units position for conservation of table storage size. The floating-point value developed thus far is multiplied by the appropriate units digit, also in floating-point form, and that result multiplied by the appropriate multiple of ten. The final result is adjusted for the original sign.

Error Conditions

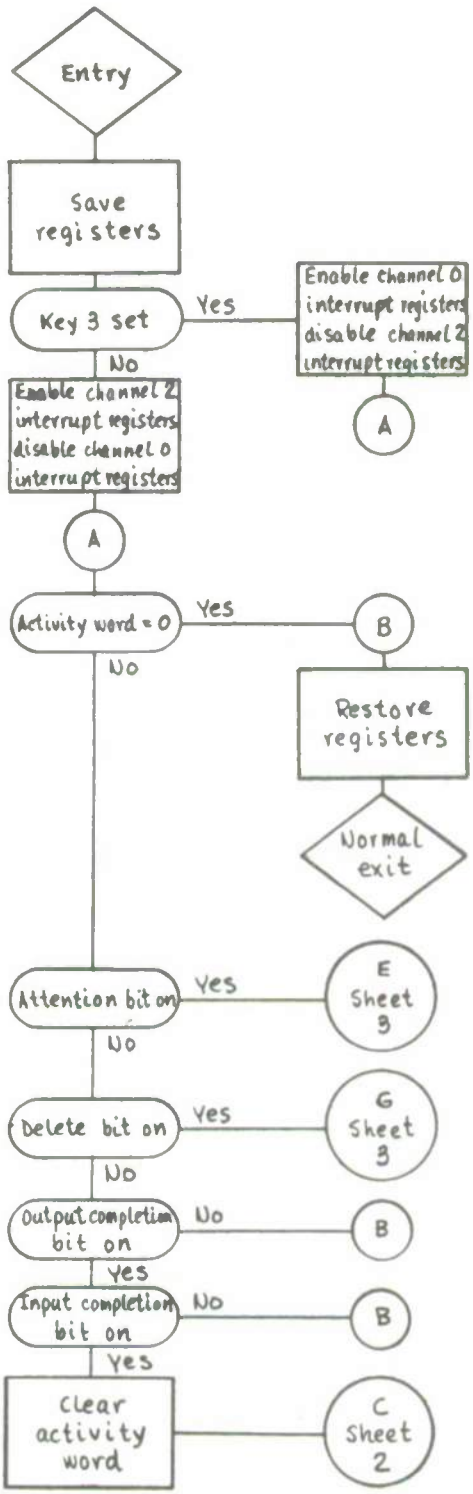
The error return from the INTBCDBIN subroutine causes an exit to the error return.



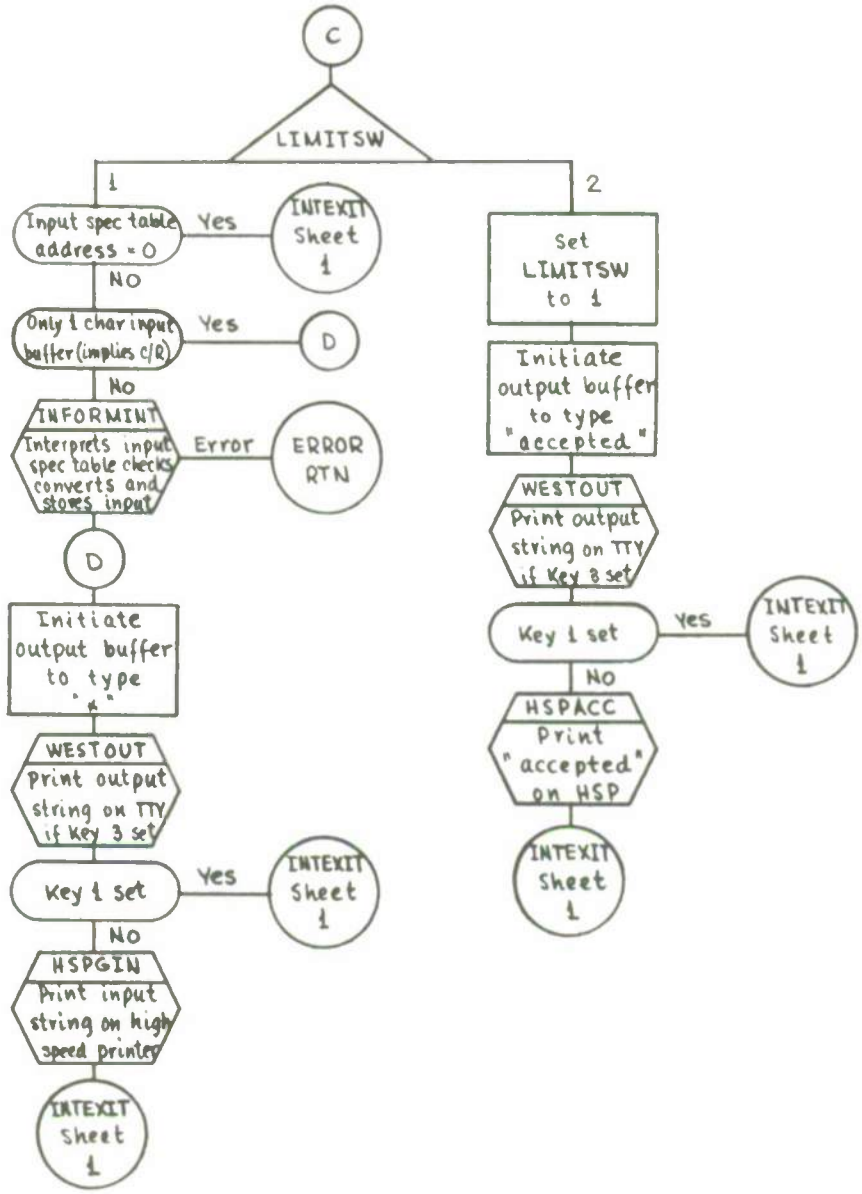
INTERCOM
Sheet 1 of 2



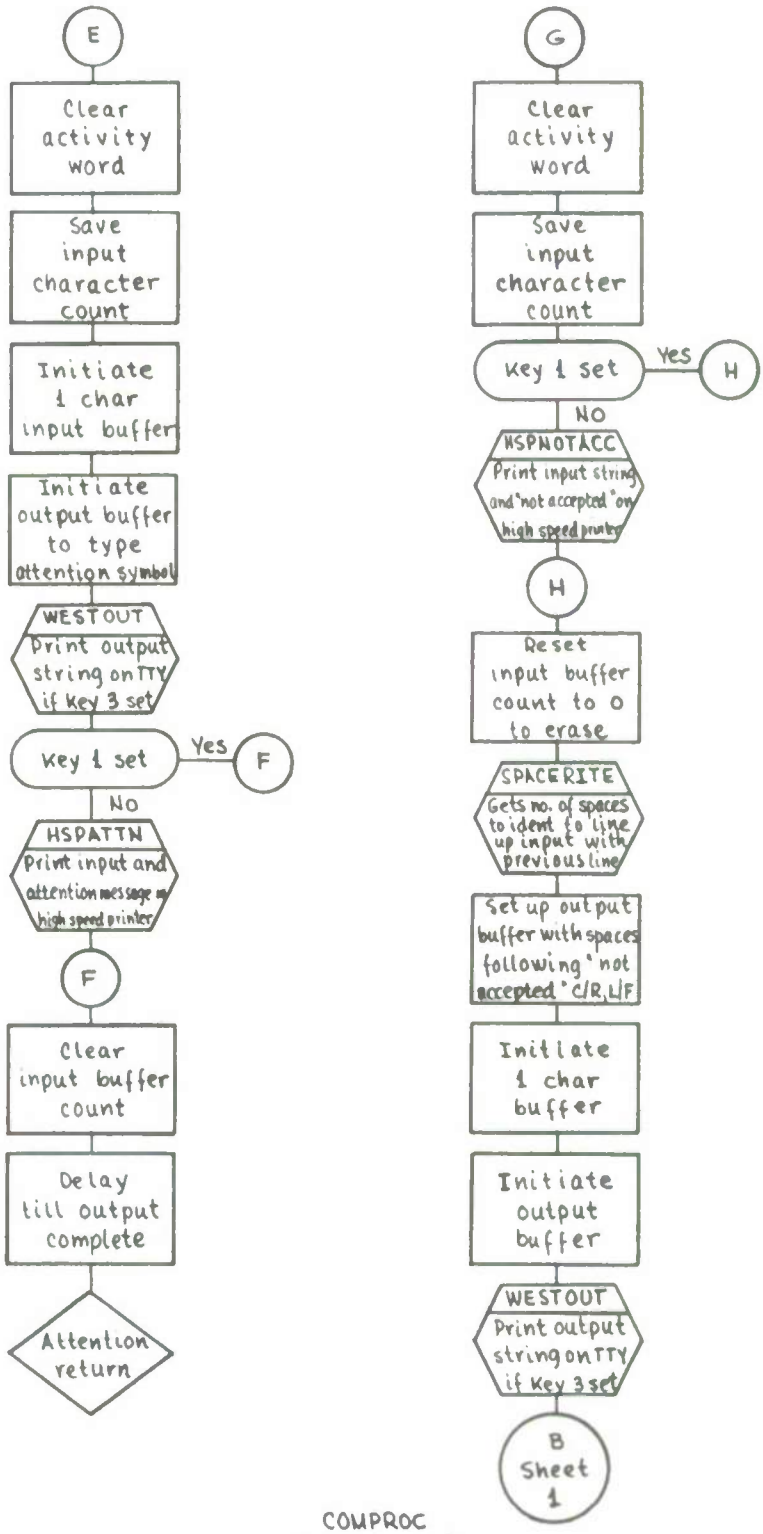
INTERCOM
Sheet 2 of 2



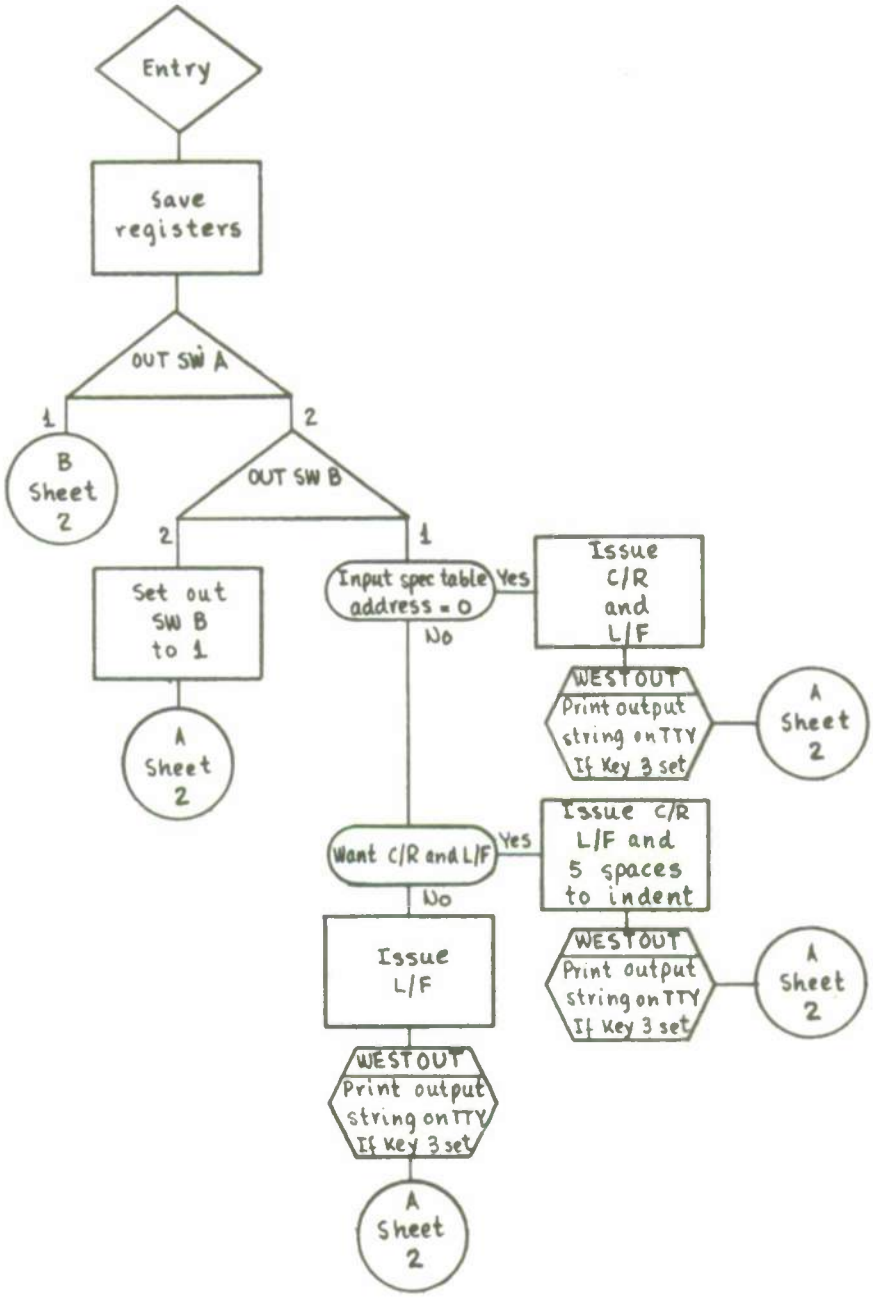
COMPROC
Sheet 1 of 3



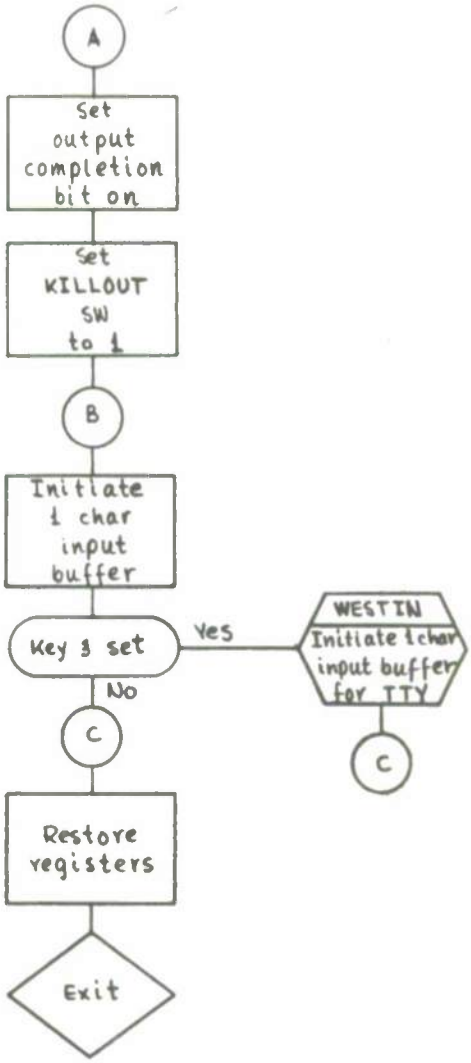
COMPROC
Sheet 2 of 3



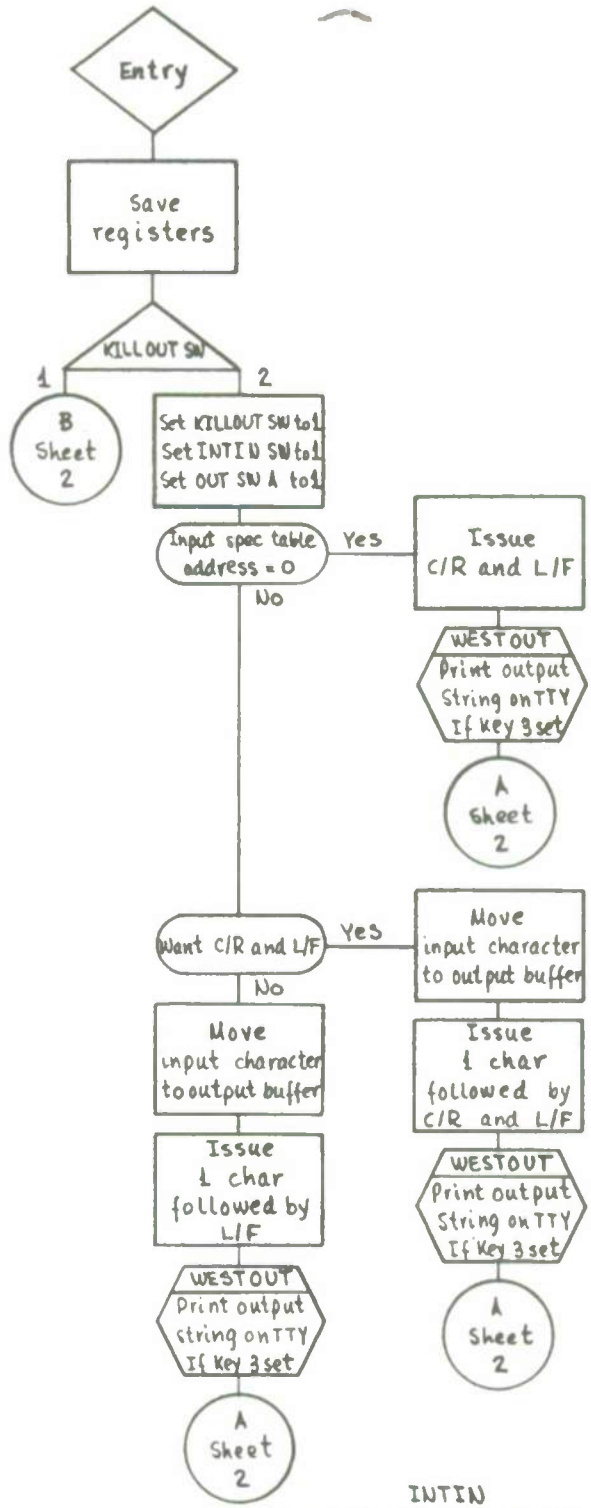
COMPROC
Sheet 3 of 3



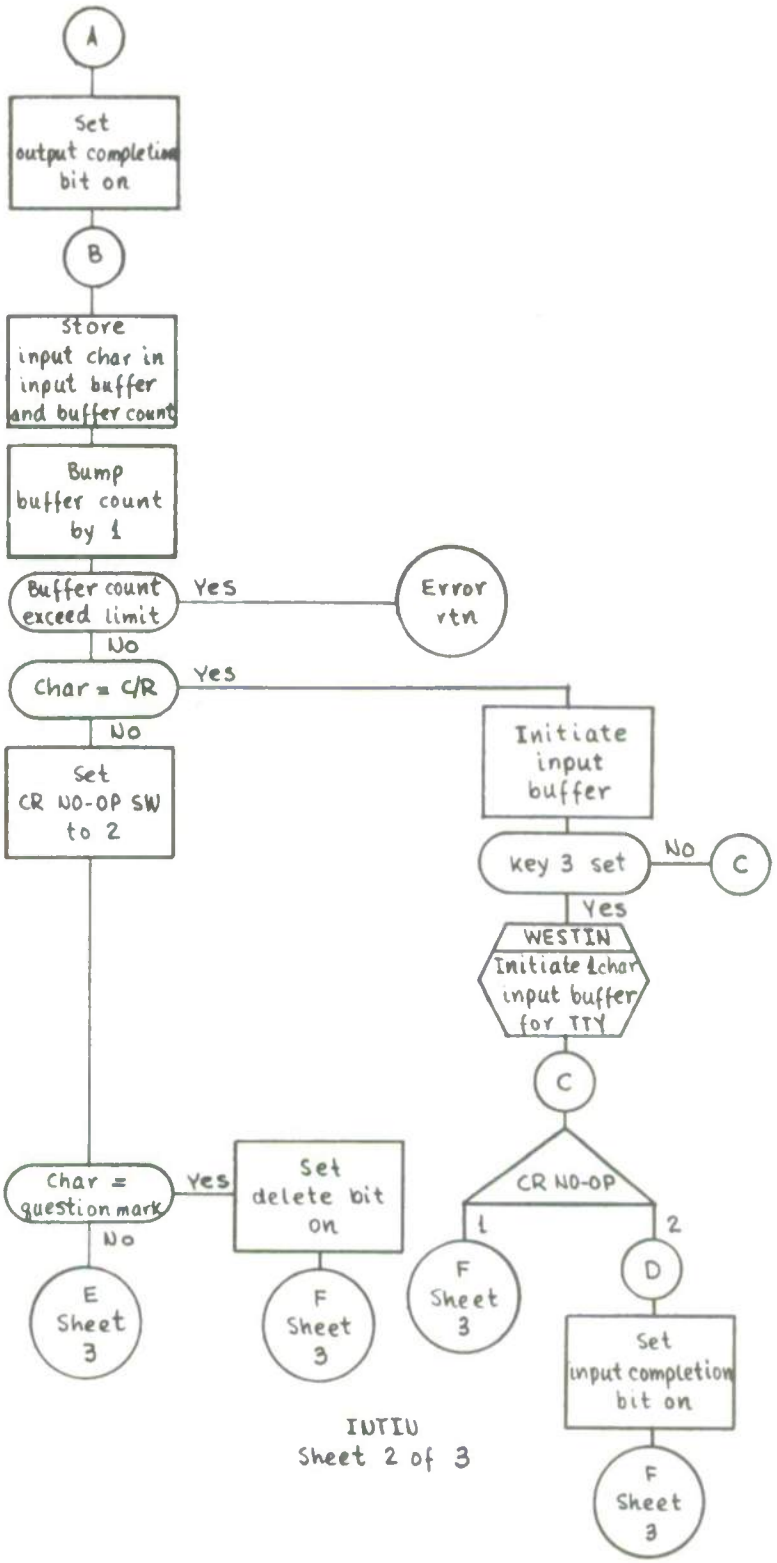
INTOUT
(Output Interrupt Routine)
Sheet 1 of 2



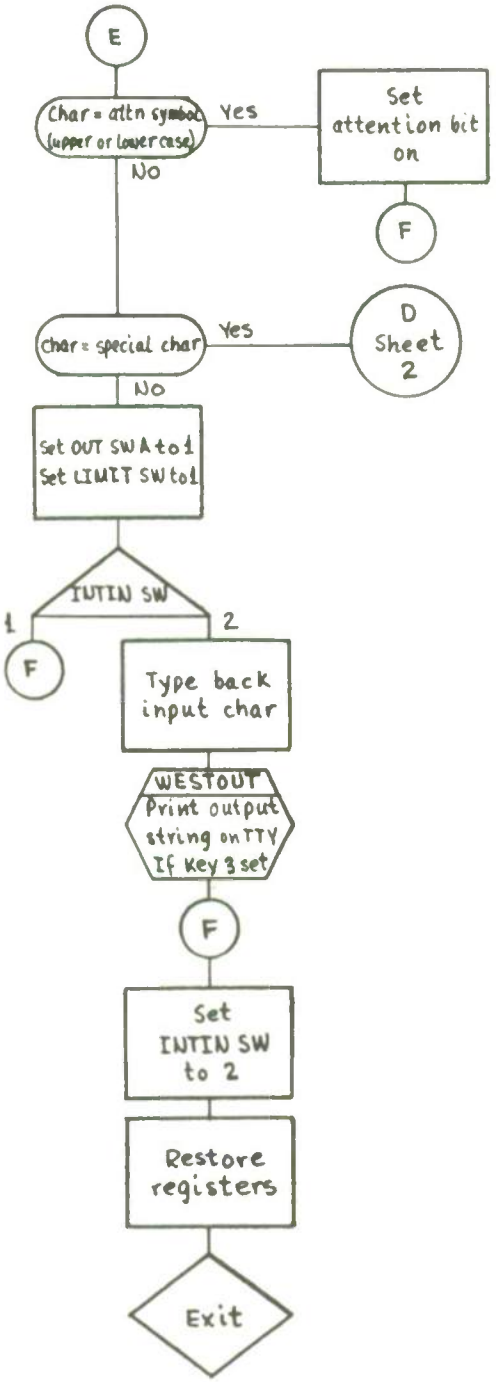
INTOUT
Sheet 2 of 2



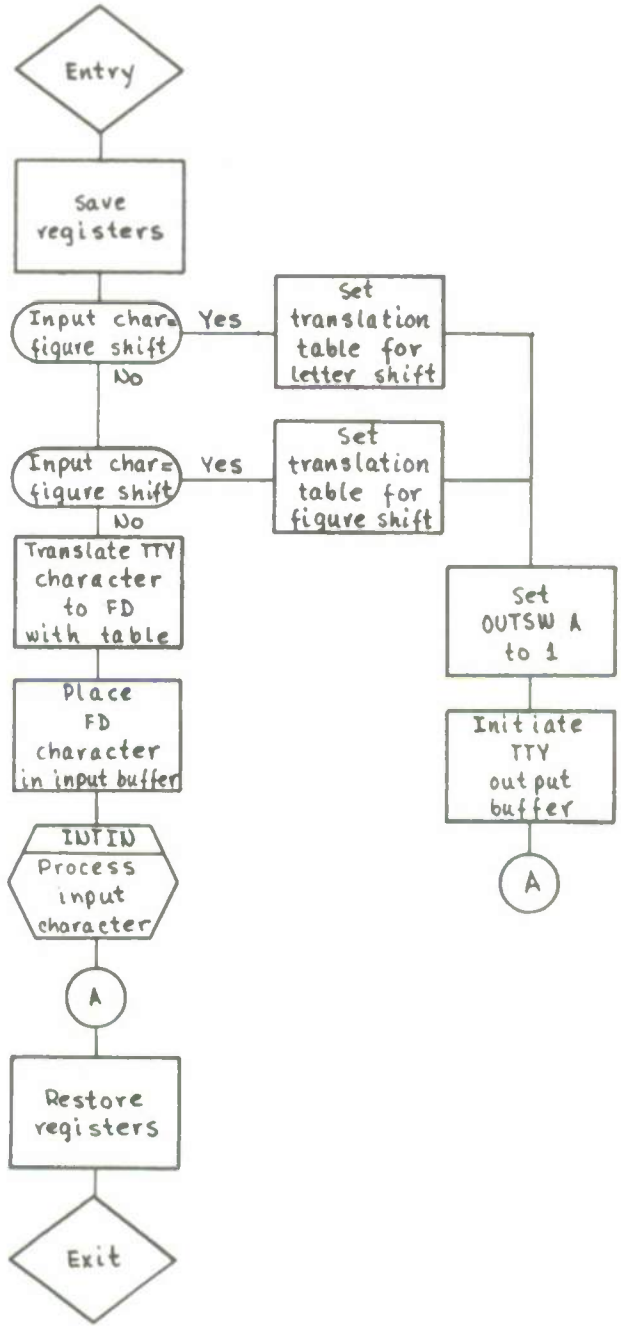
INTIN
(Input Interrupt Routine)
Sheet 1 of 3



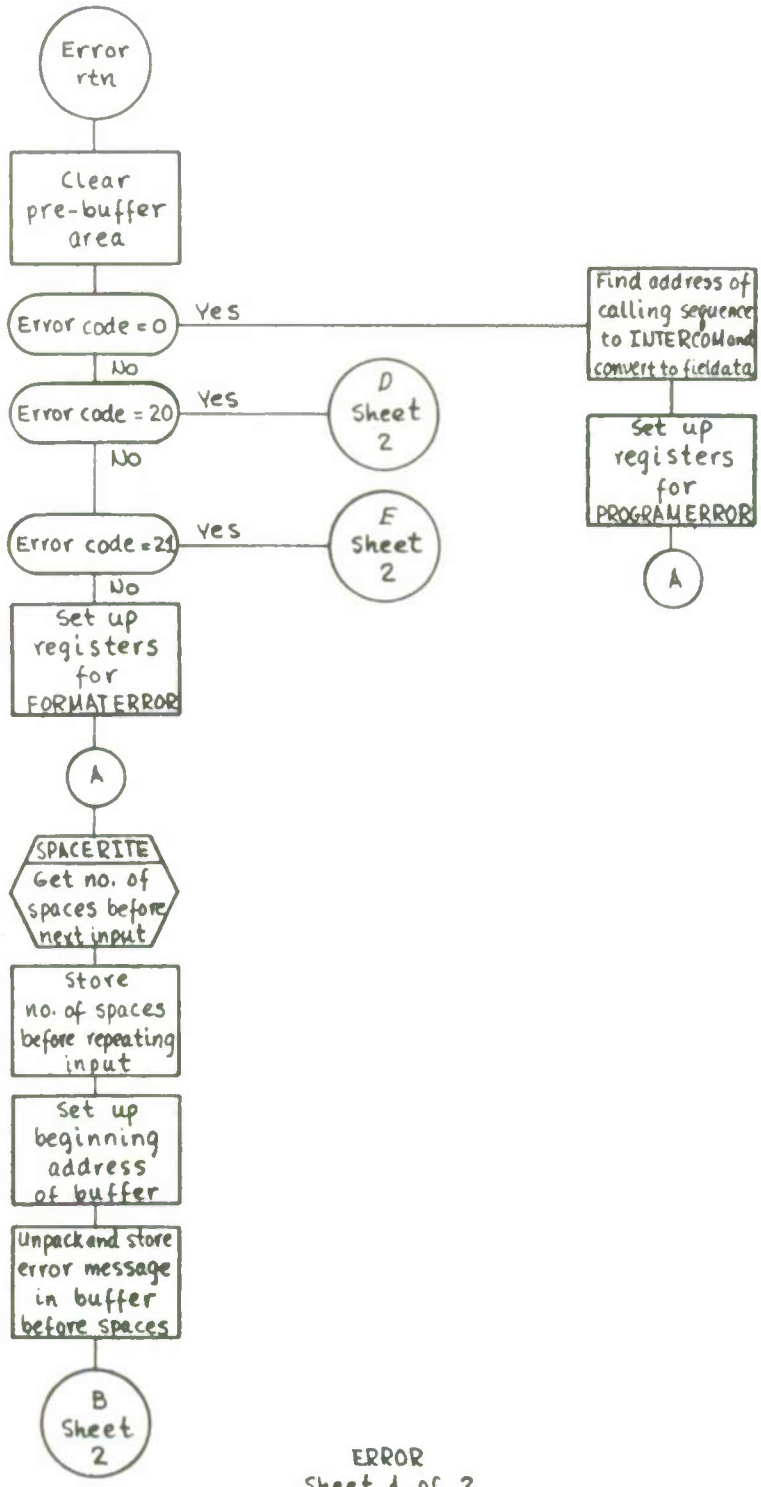
IWTIU
Sheet 2 of 3



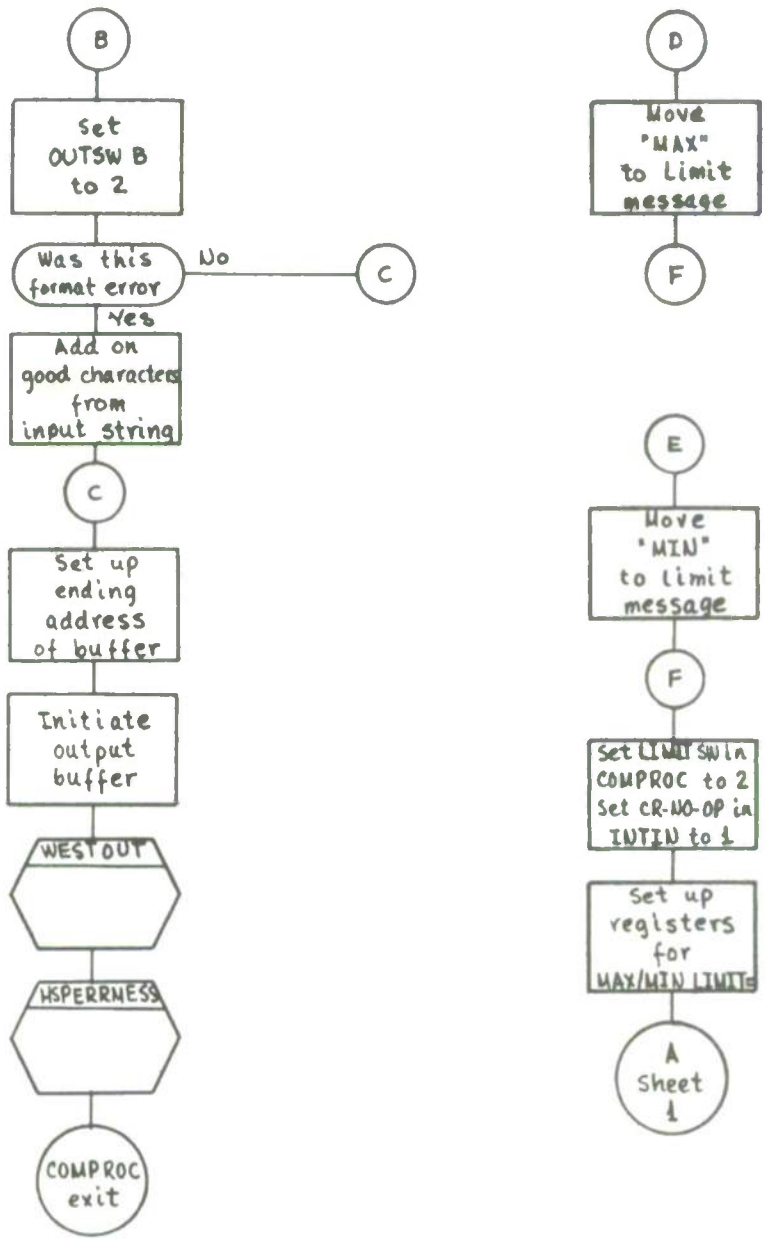
INTIN
Sheet 3 of 3



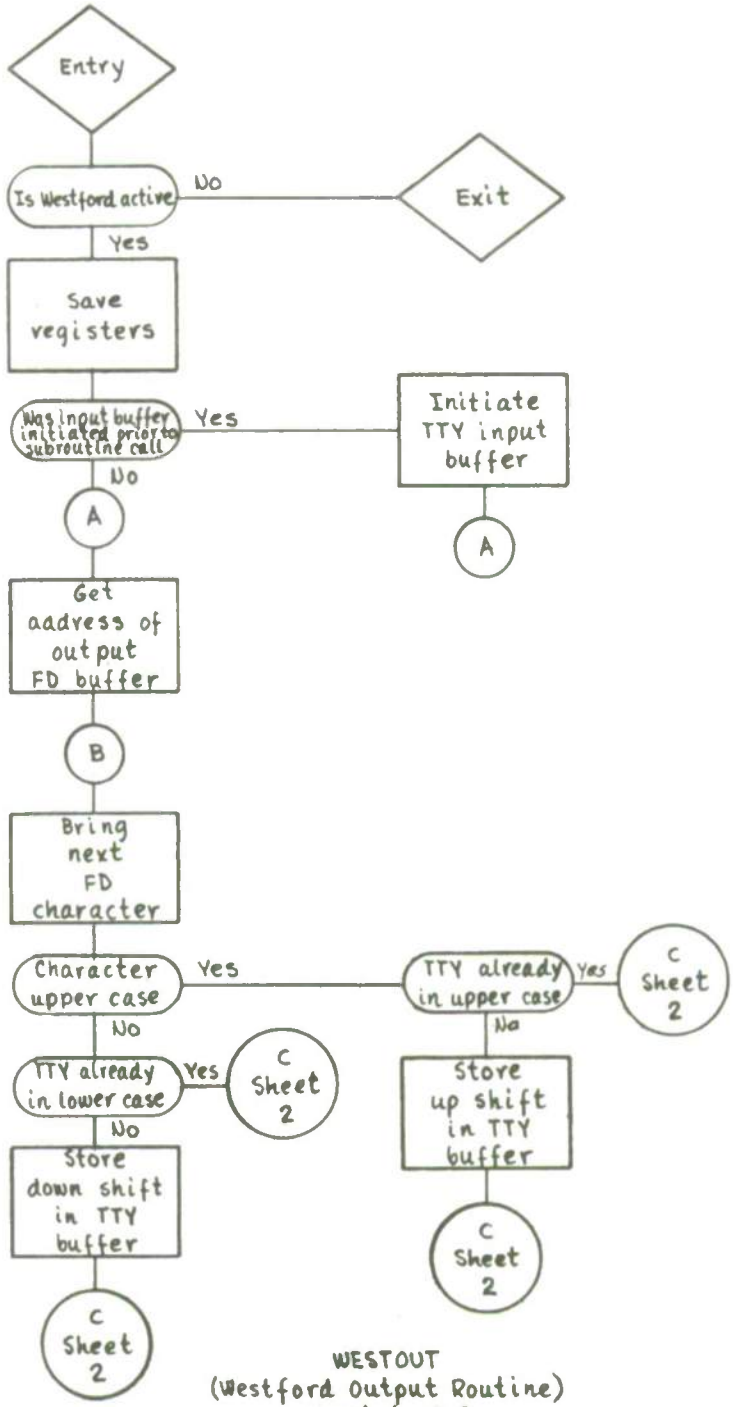
TTYININT
(Westford Input Interrupt Routine)



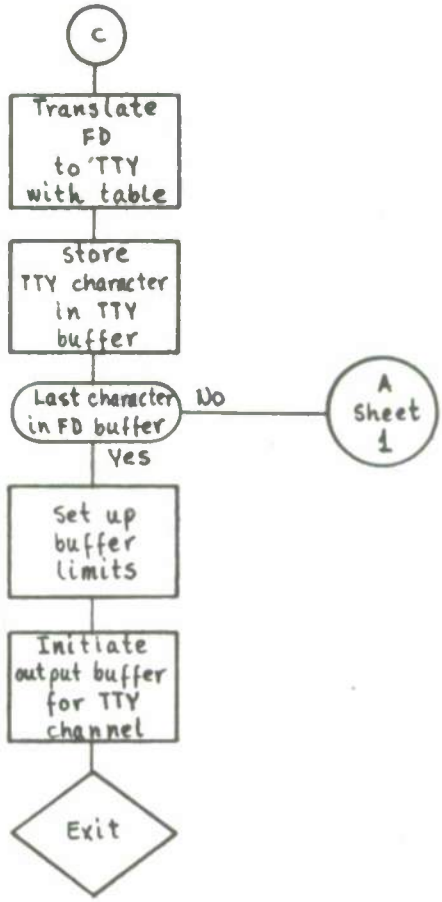
ERROR
Sheet 1 of 2



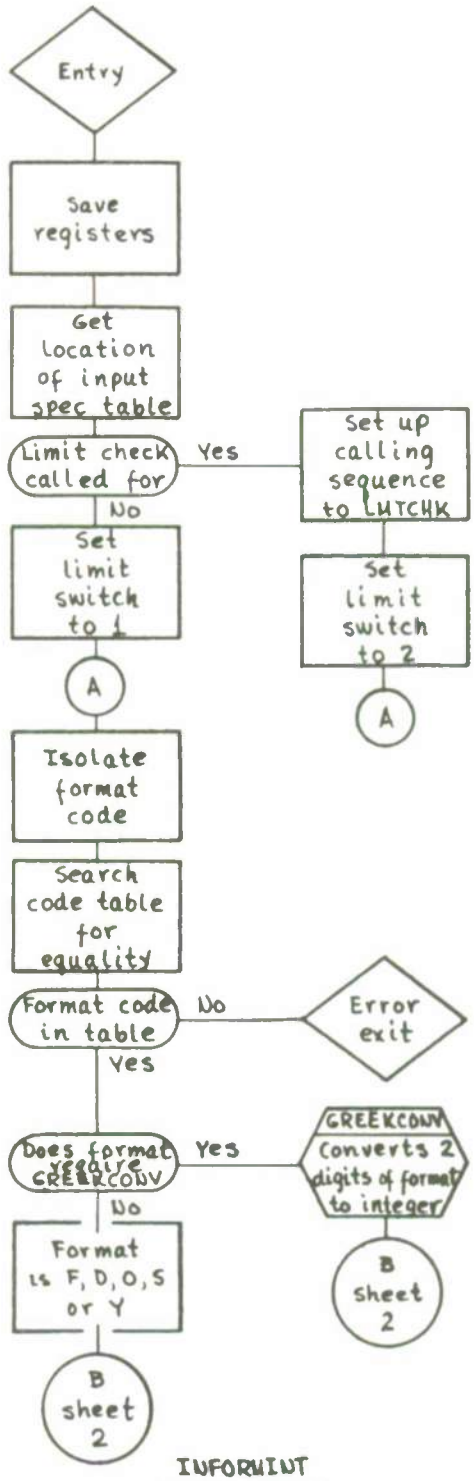
ERROR
Sheet 2 of 2



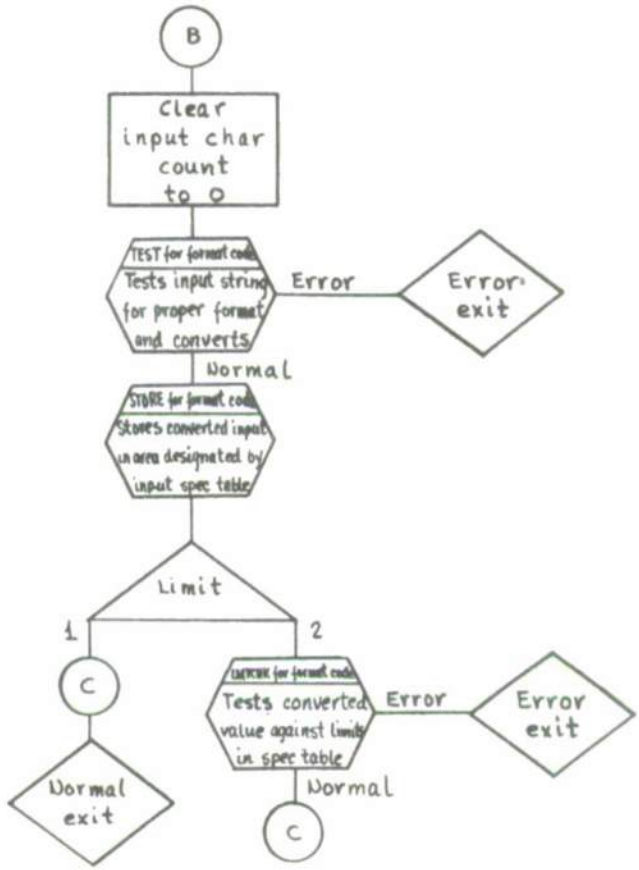
WESTOUT
(Westford Output Routine)
Sheet 1 of 2



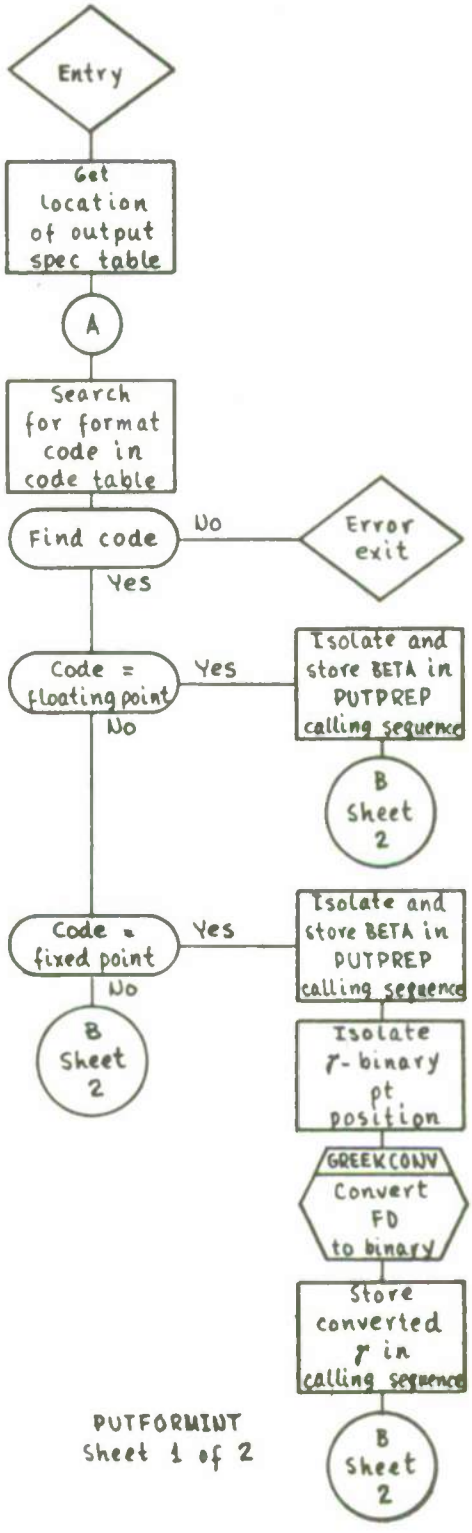
WESTOUT
Sheet 2 of 2



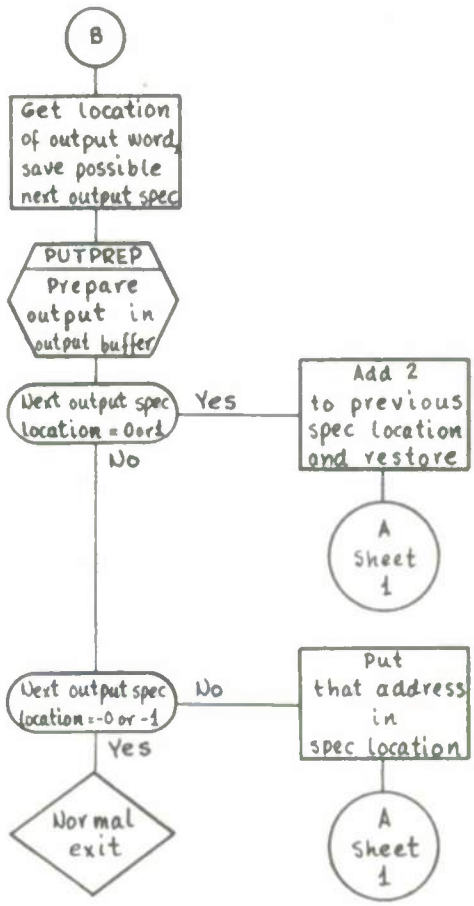
INFORMINT
Sheet 1 of 2



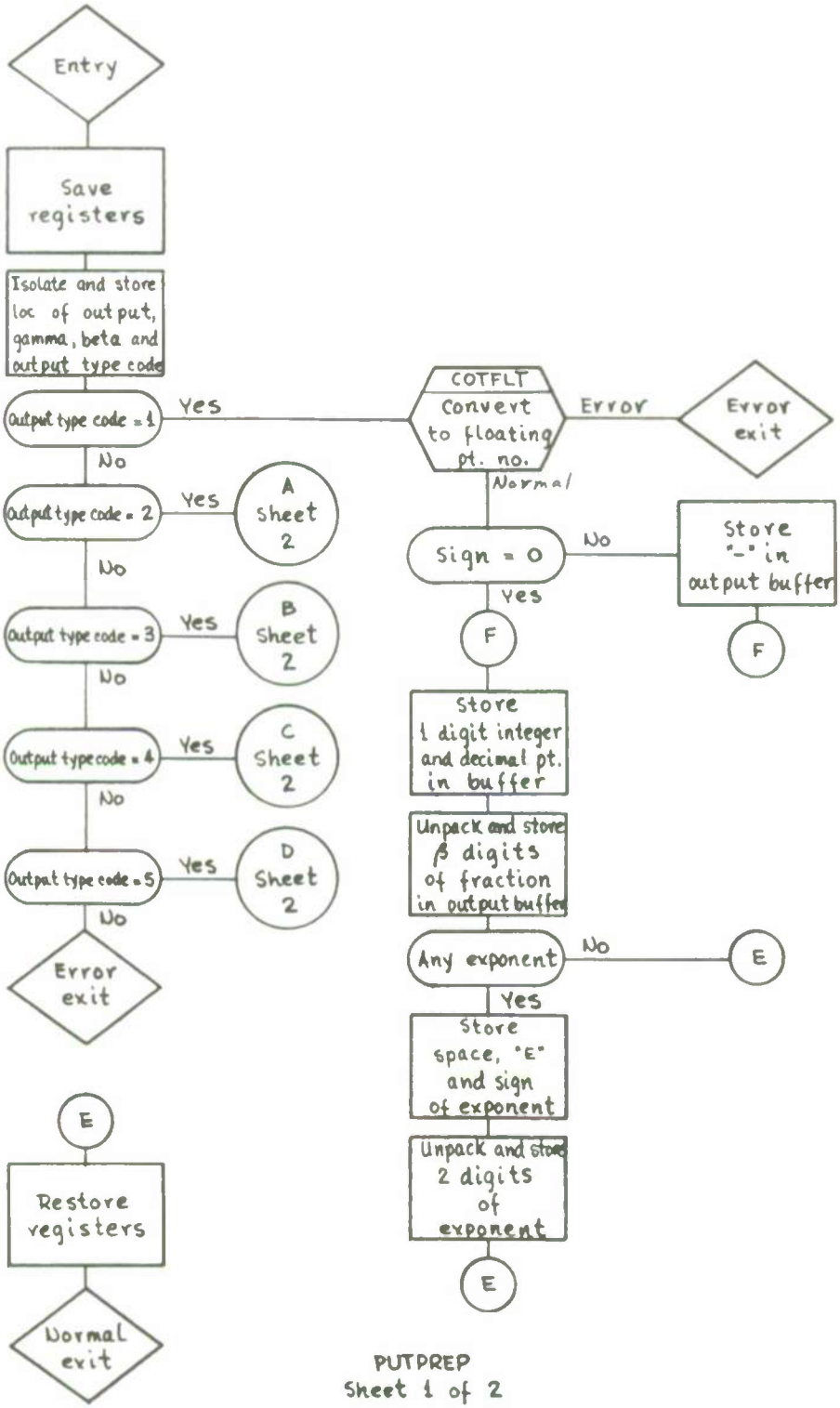
INFORMINT
Sheet 2 of 2



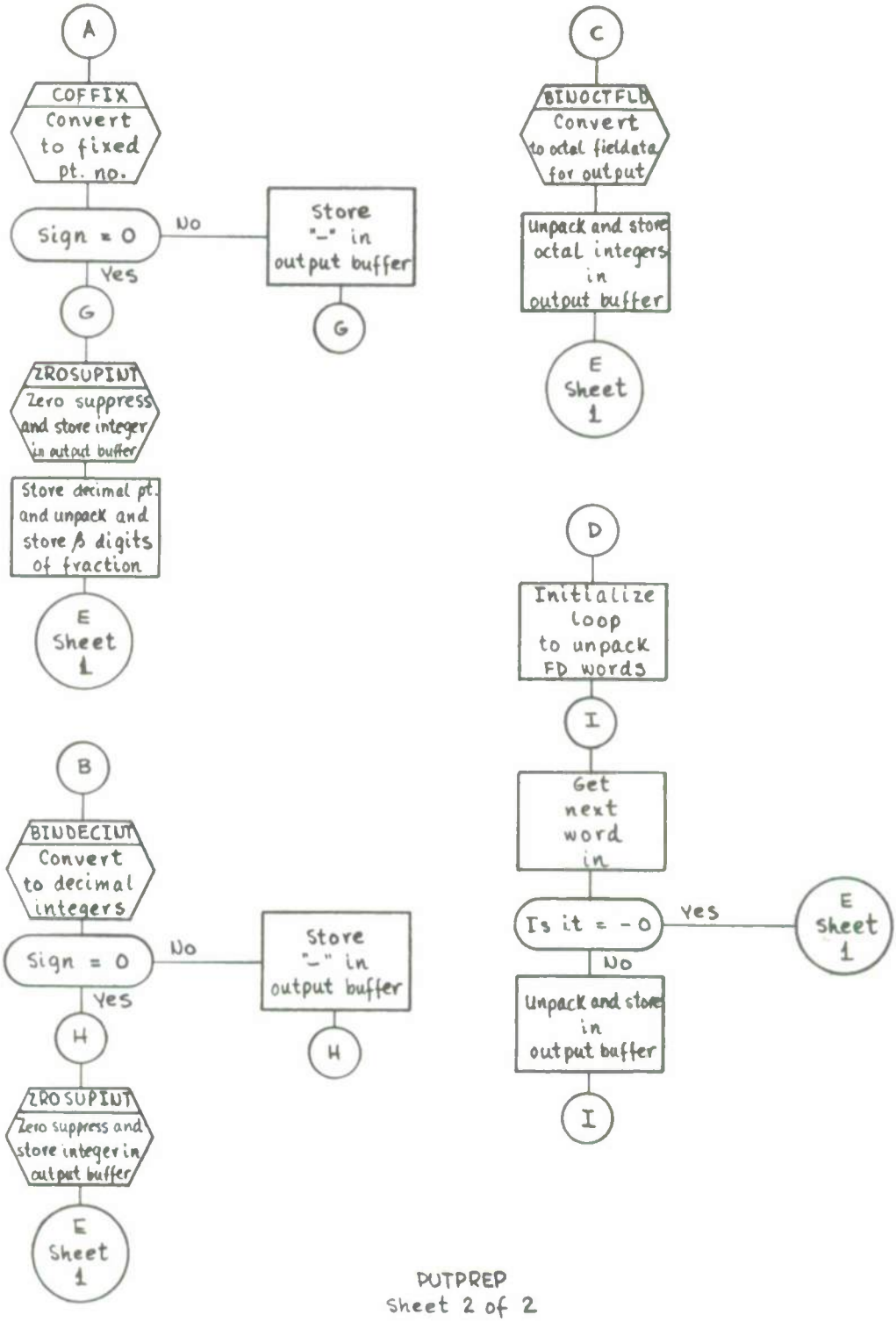
PUTFORMINT
Sheet 1 of 2



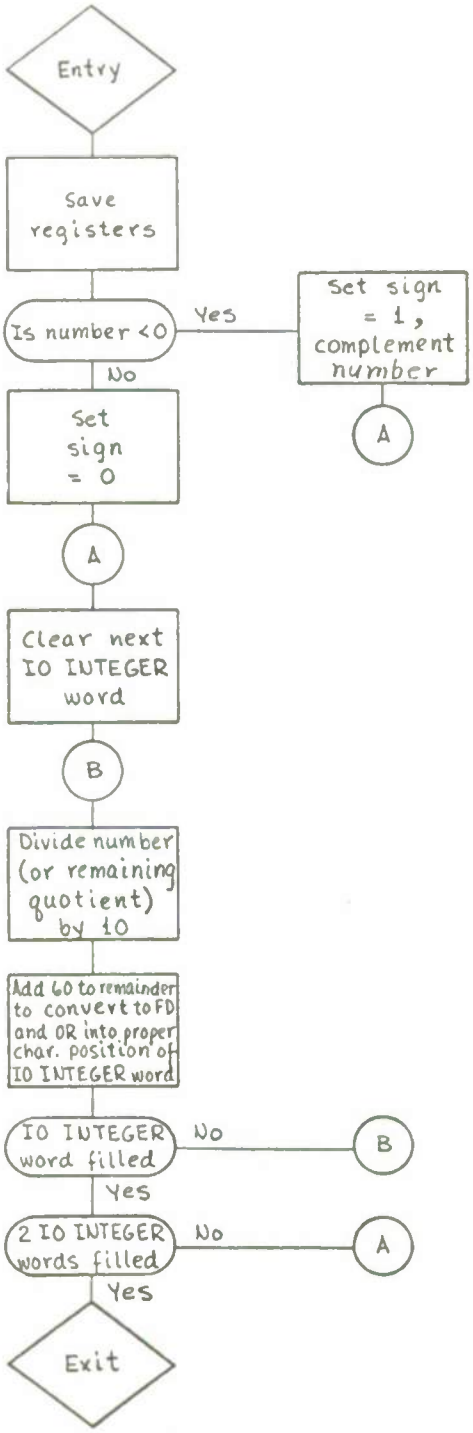
PUTFORMINT
Sheet 2 of 2



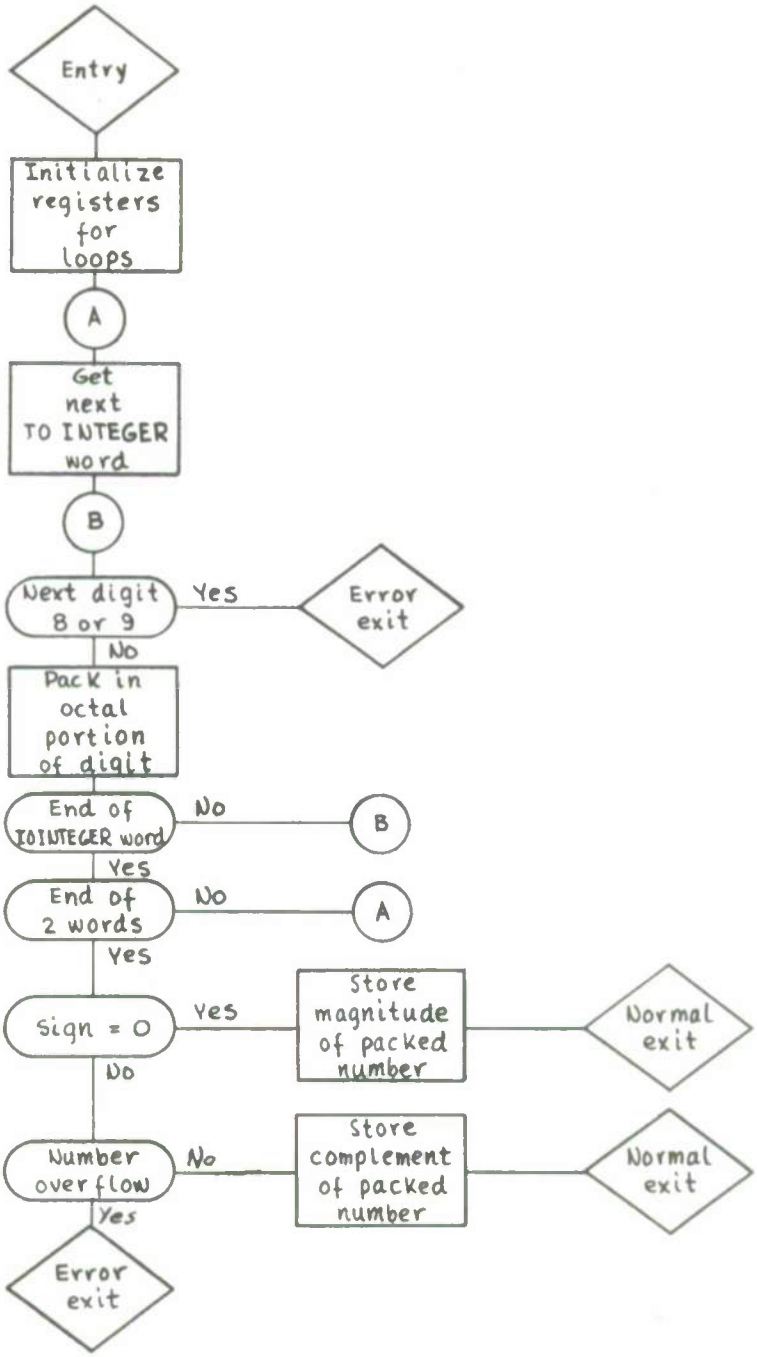
PUTPREP
Sheet 1 of 2



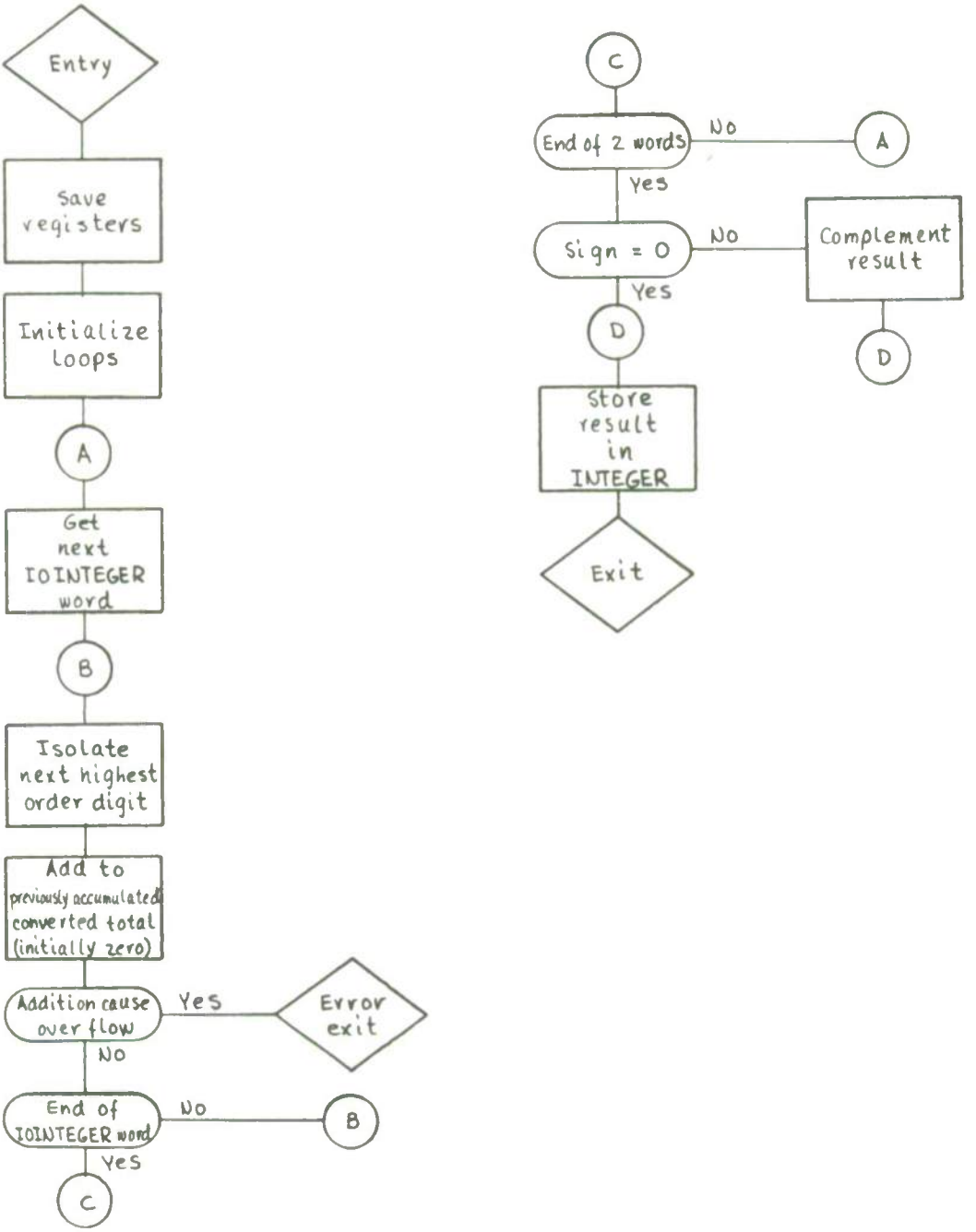
PUTPREP
Sheet 2 of 2


Entry
Save registers
Is number <0
Yes
Set sign = 1, complement number
A
No
Set sign = 0
A
Clear next IO INTEGER word
B
Divide number (or remaining quotient) by 10
Add 60 to remainder to convert to FD and OR into proper char. position of IO INTEGER word
IO INTEGER word filled
No
B
Yes
2 IO INTEGER words filled
No
A
Yes
Exit

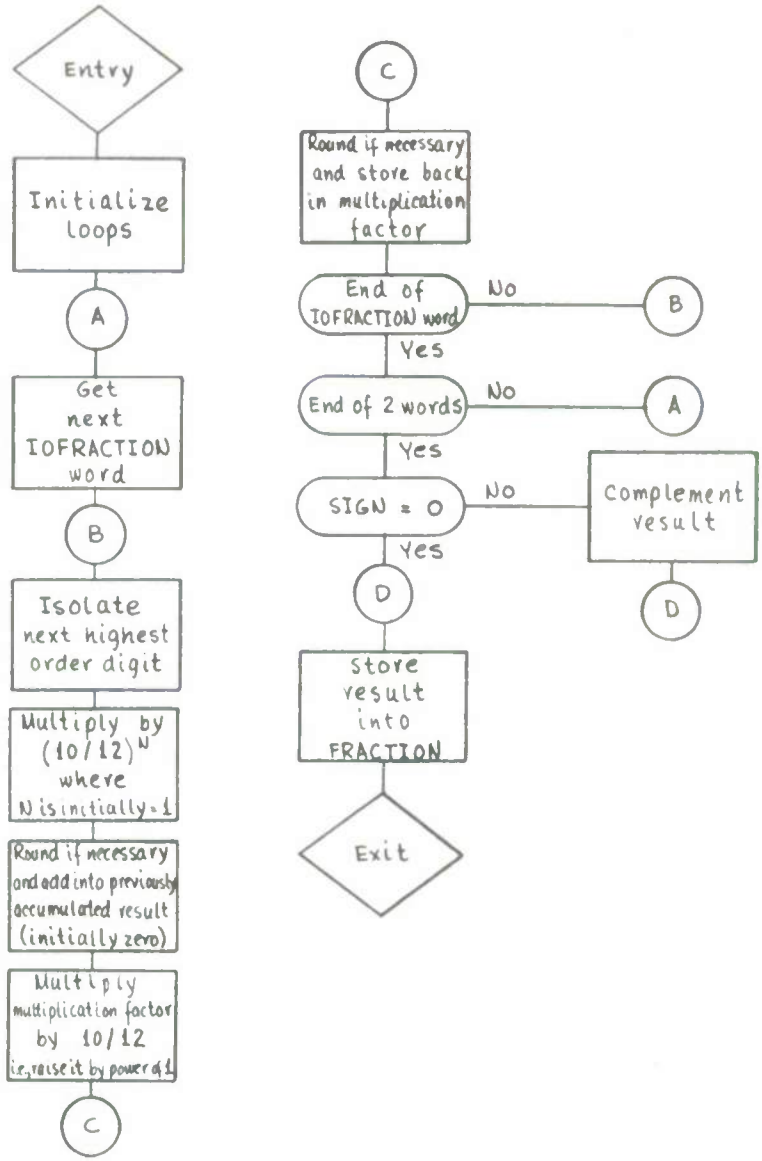
BINDECINT


Entry
Initialize registers for loops
A
Get next TO INTEGER word
B
Next digit 8 or 9
Yes
Error exit
No
Pack in octal portion of digit
End of TOINTEGER word
No
B
Yes
End of 2 words
No
A
Yes
Sign = 0
Yes
Store magnitude of packed number
Normal exit
No
Number overflow
No
Store complement of packed number
Normal exit
Yes
Error exit

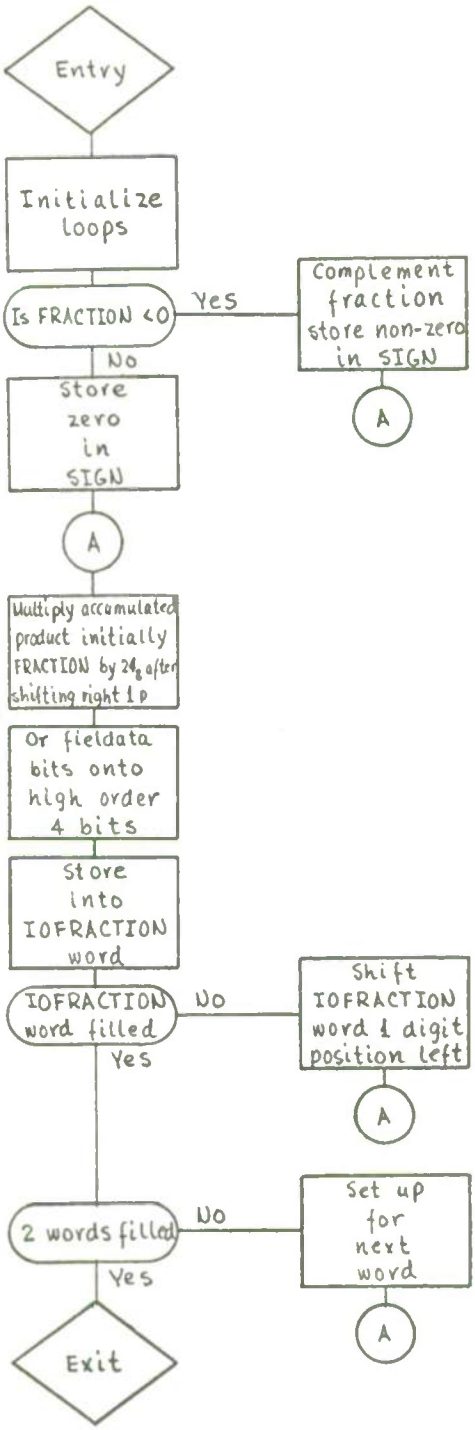
INTOCTBIN


Entry
Save registers
Initialize loops
A
Get next IOINTEGER word
B
Isolate next highest order digit
Add to previously accumulated converted total (initially zero)
Addition cause over flow
Yes
Error exit
No
End of IOINTEGER word
No
B
Yes
C
C
End of 2 words
No
A
Yes
Sign = 0
No
Complement result
Yes
D
D
Store result in INTEGER
Exit

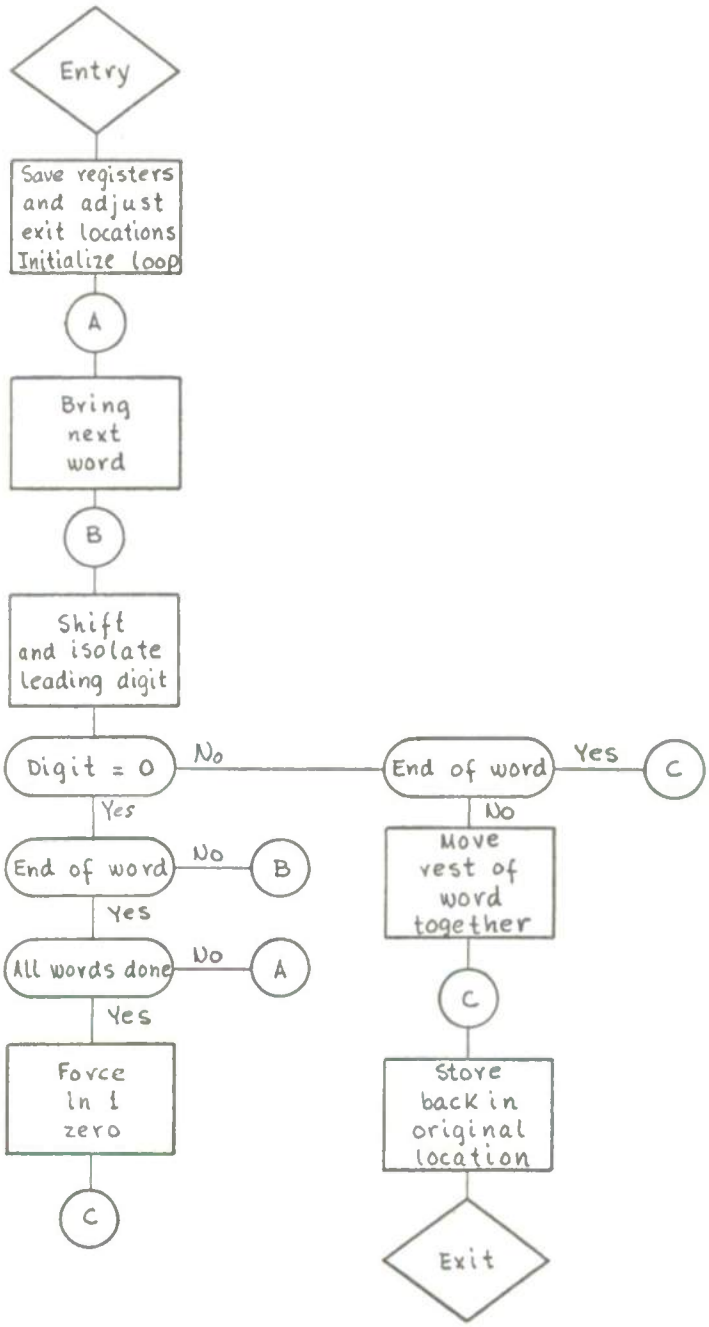
INTBCDBIN


Entry
Initialize loops
A
Get next IOFRACTION word
B
Isolate next highest order digit
Multiply by (10/12)^N where N is initially = 1
Round if necessary and add into previously accumulated result (initially zero)
Multiply multiplication factor by 10/12 i.e., raise it by power of 1
C
C
Round if necessary and store back in multiplication factor
End of IOFRACTION word
No
B
Yes
End of 2 words
No
A
Yes
SIGN = 0
No
Complement result
D
Yes
D
Store result into FRACTION
Exit

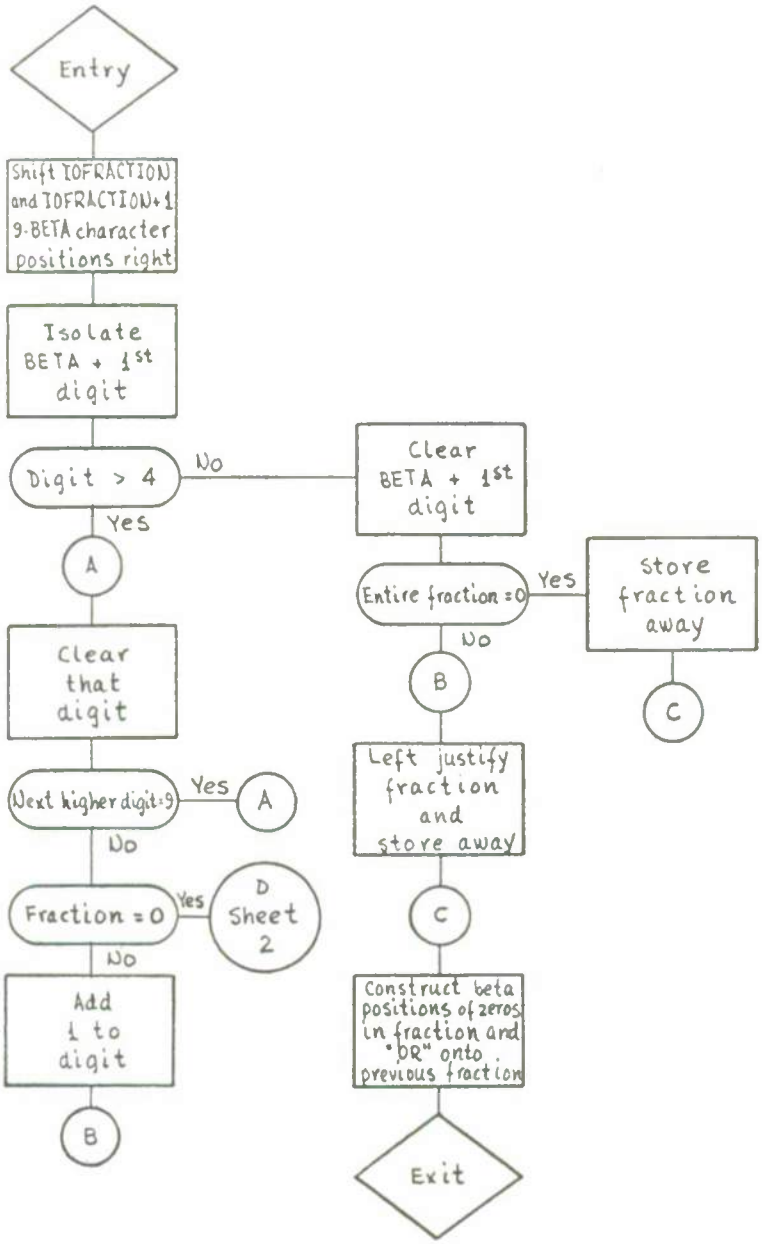
FRABCDBIN


Entry
Initialize loops
Is FRACTION <0
Yes
Complement fraction store non-zero in SIGN
A
No
Store zero in SIGN
A
Multiply accumulated product initially FRACTION by 2^6 after shifting right 1 p
Or fieldata bits onto high order 4 bits
Store into IOFRACTION word
IOFRACTION word filled
No
Shift IOFRACTION word 1 digit position left
A
Yes
2 words filled
No
Set up for next word
A
Yes
Exit

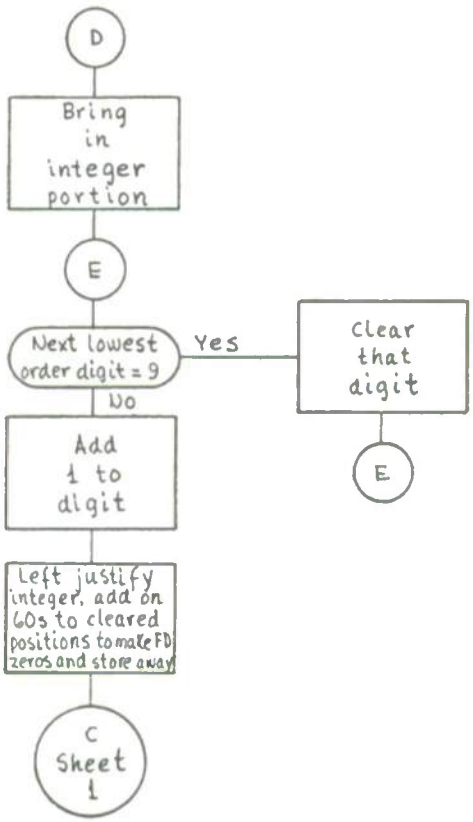
BINDECFRA


Entry
Save registers and adjust exit locations Initialize loop
A
Bring next word
B
Shift and isolate leading digit
Digit = 0
No
End of word
Yes
C
Yes
No
End of word
No
B
Move rest of word together
Yes
All words done
No
A
C
Yes
Force in 1 zero
Store back in original location
C
Exit

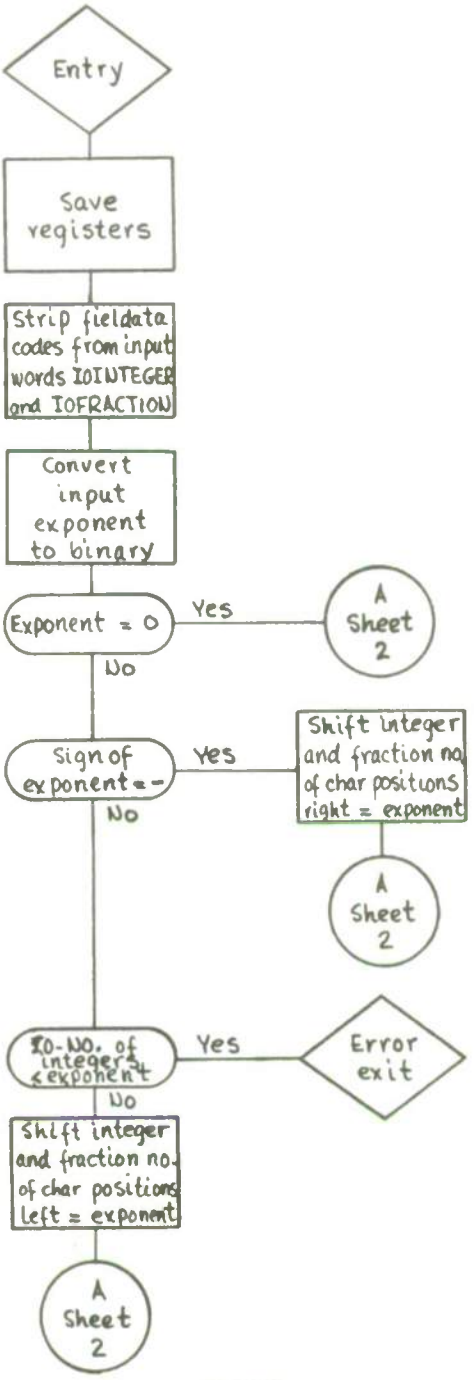
SUPZRO



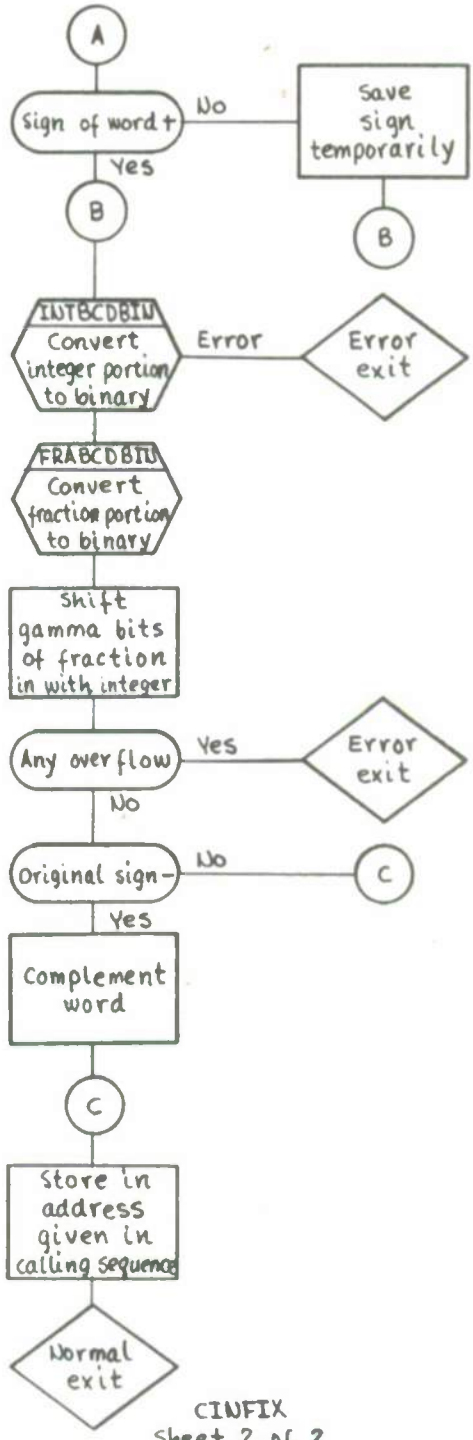
COFRND
Sheet 1 of 2



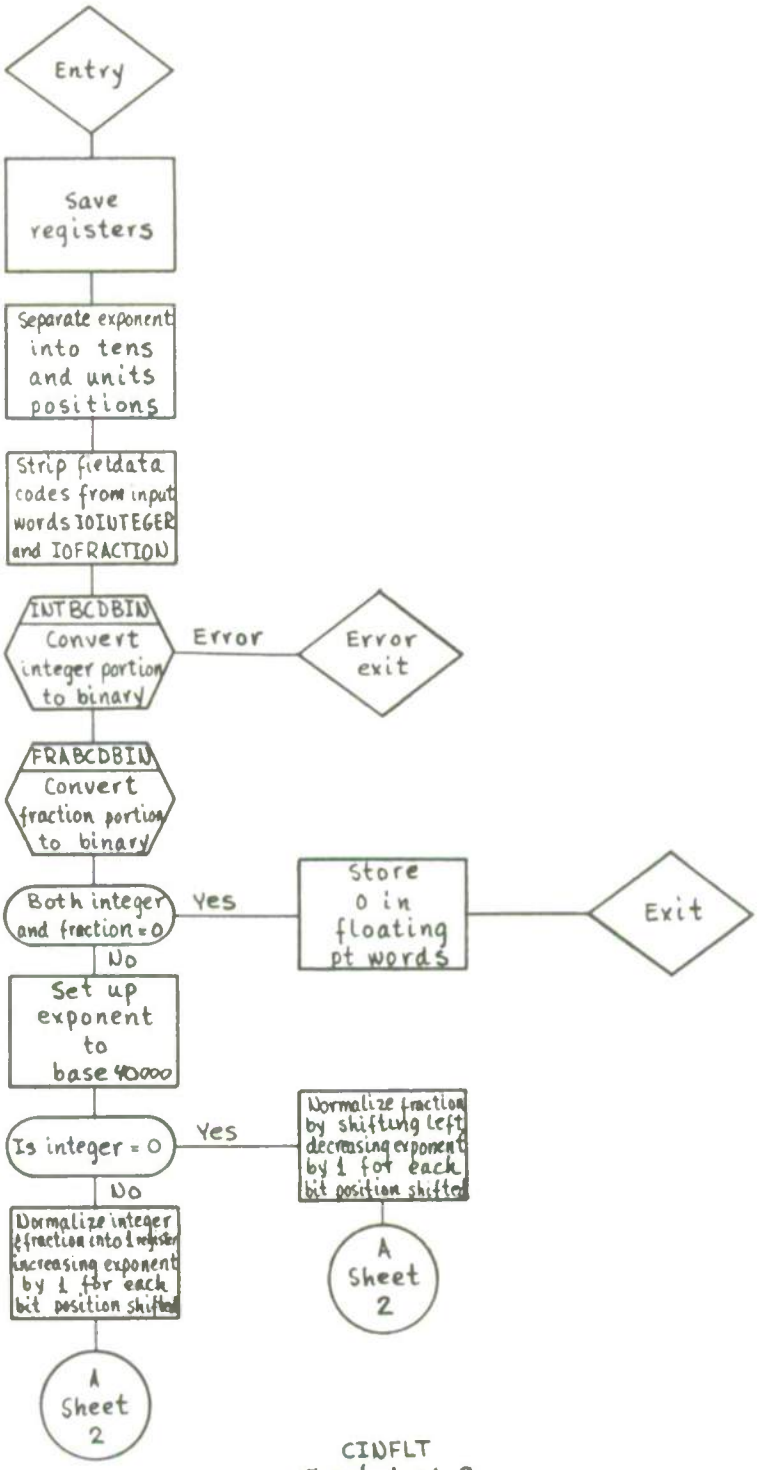
COFRND
Sheet 2 of 2



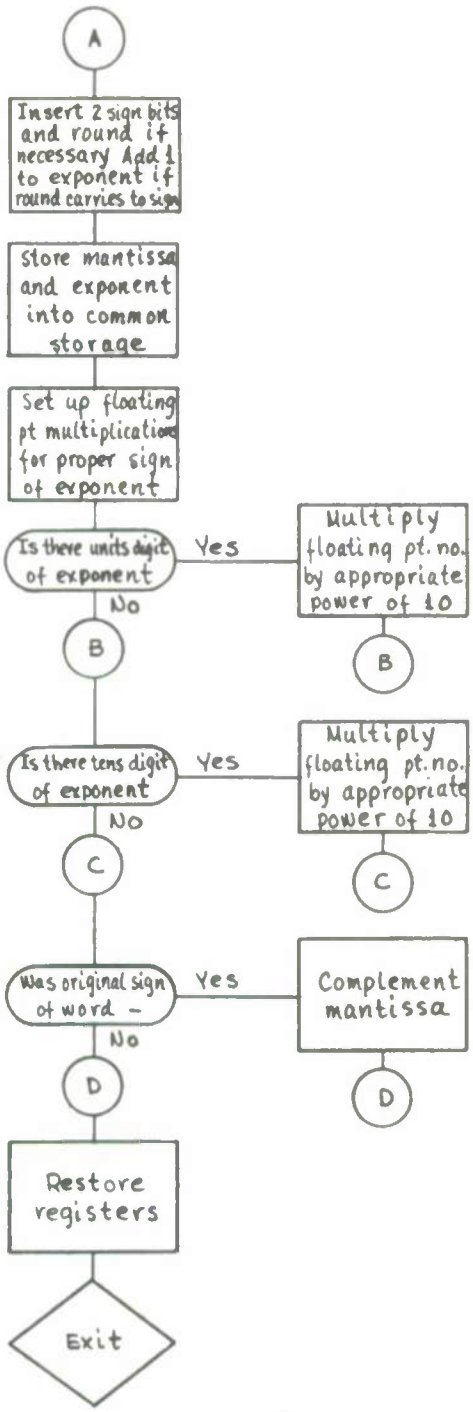
CINFIX
Sheet 1 of 2



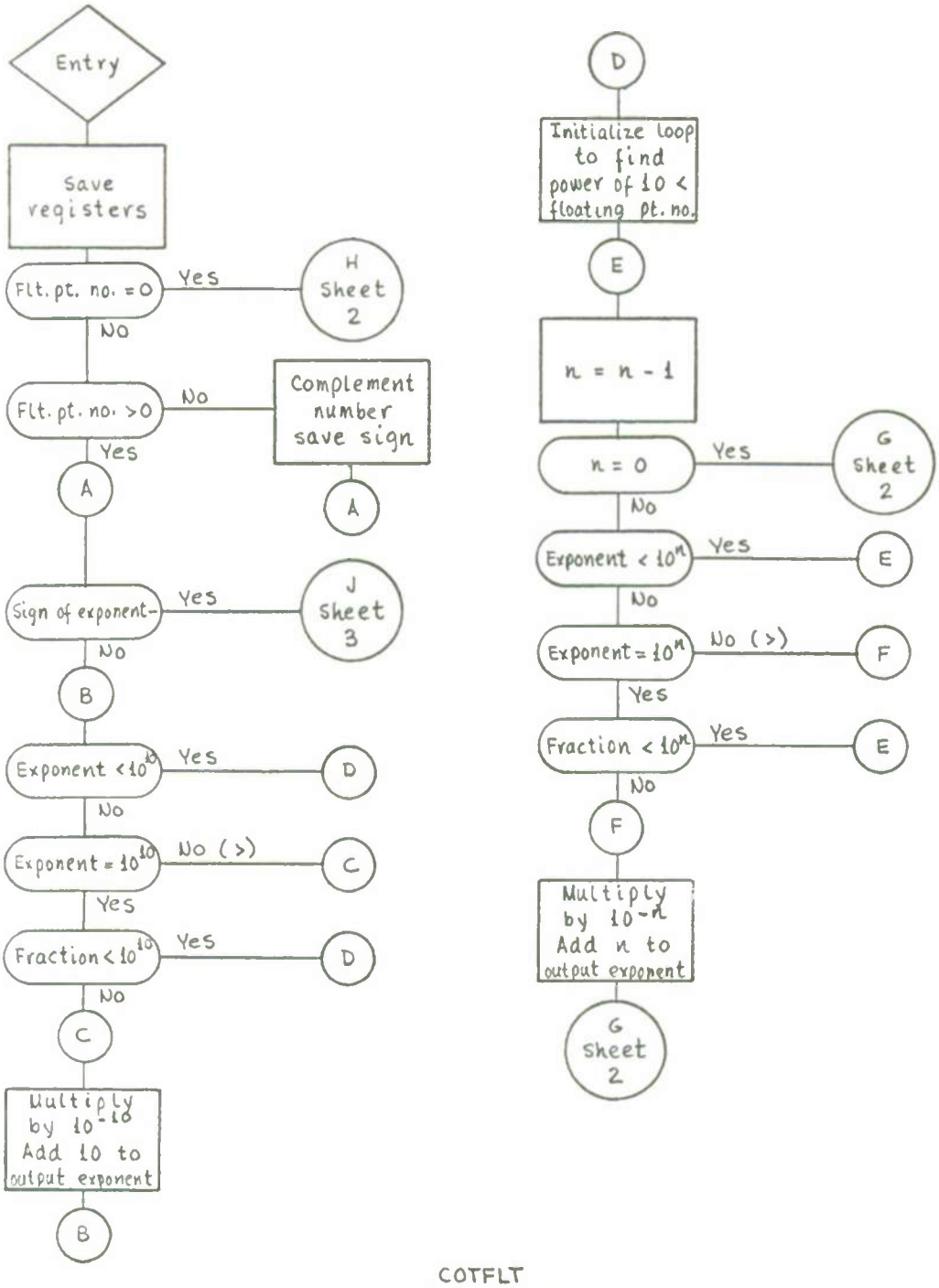
CIWFIX
Sheet 2 of 2



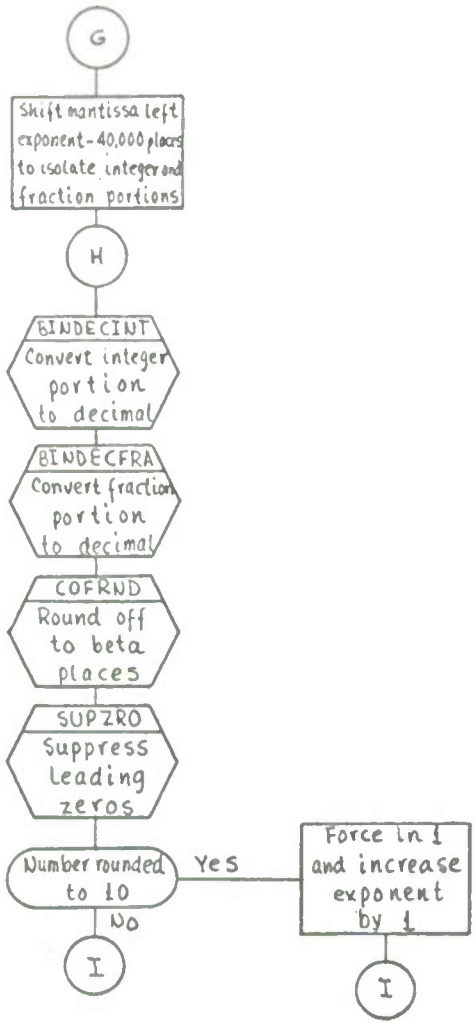
CIVFLT
Sheet 1 of 2

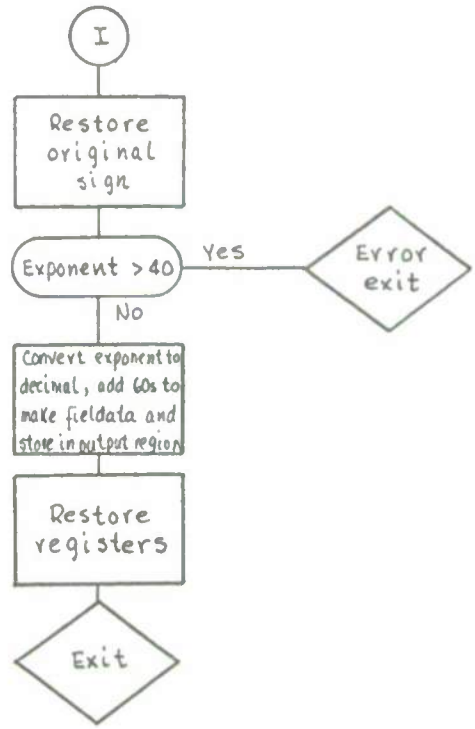


CINFLT
Sheet 2 of 2

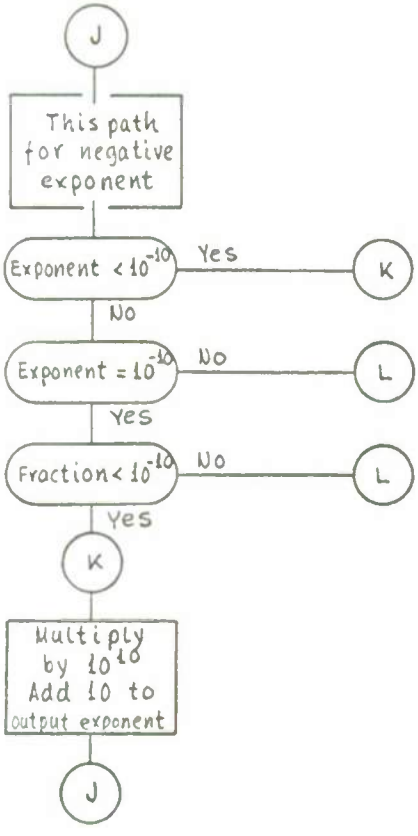


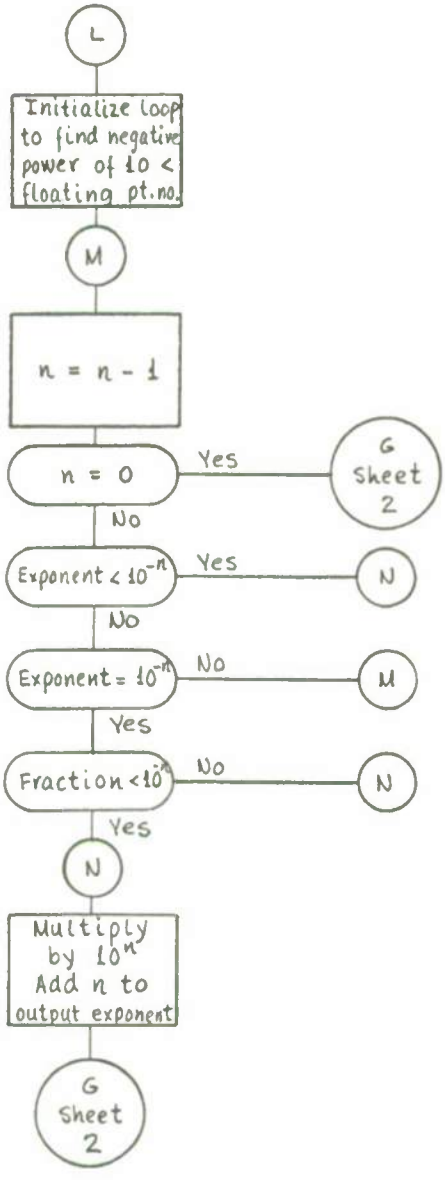
COTFLT
Sheet 1 of 3



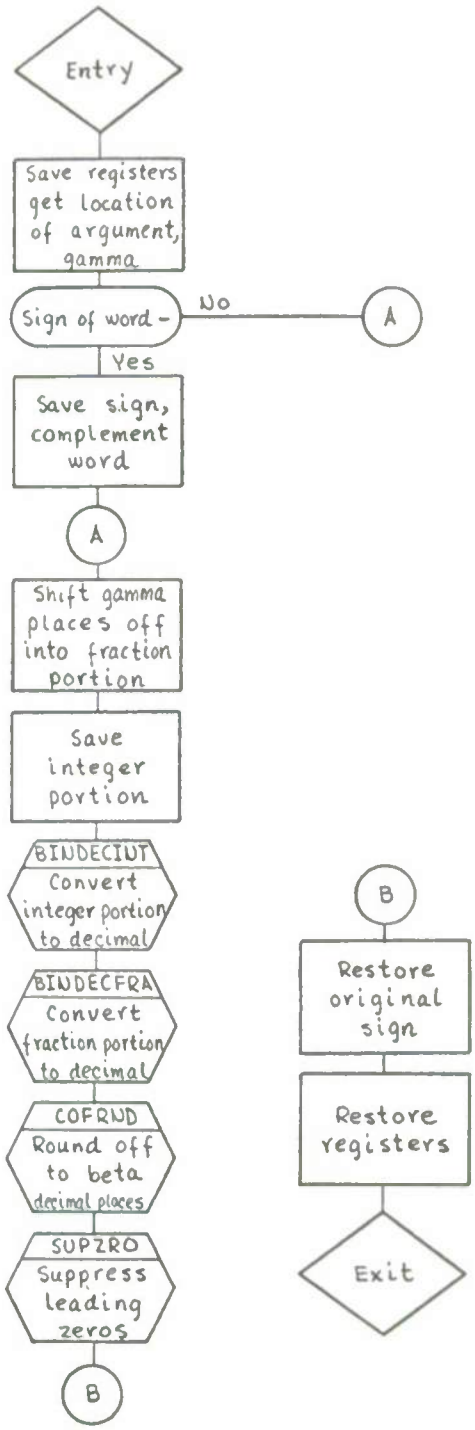


COTFLT
Sheet 2 of 3

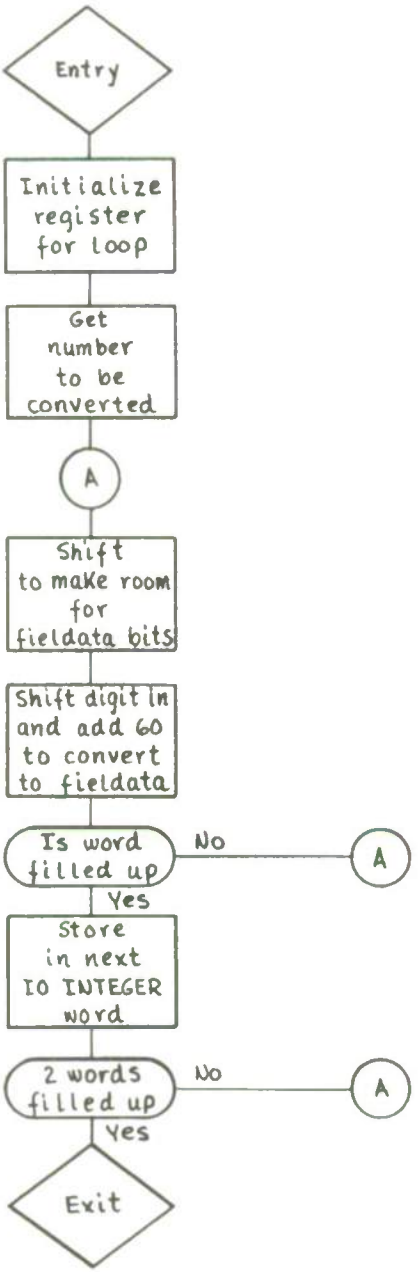




COTFLT
Sheet 3 of 3


Entry
Save registers get location of argument, gamma
Sign of word -
No
A
Yes
Save sign, complement word
A
Shift gamma places off into fraction portion
Save integer portion
BINDECIUT
Convert integer portion to decimal
BINDECFRA
Convert fraction portion to decimal
COFRND
Round off to beta decimal places
SUPZRO
Suppress leading zeros
B
B
Restore original sign
Restore registers
Exit

COFFIX


Entry
Initialize register for loop
Get number to be converted
A
Shift to make room for fieldata bits
Shift digit in and add 60 to convert to fieldata
Is word filled up
No
A
Yes
Store in next IO INTEGER word
2 words filled up
No
A
Yes
Exit

BINOCTFLD

CARDS	L1	IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	COCCC		NTERCOM		PROGRAM ADAMS-ASSOC•7/1/65			
.	COCC1		KYBRD		U-TAG NTERCOM•COMPROC	00000	00002 00004	
.	COCC2				FO 1•KYBRO	00001	20360 72711	
.	COCC3				CALL FLTPT			
.	COCC4		KEYIN		MEANS C2			
.	COCC5		KEYOUT		MEANS C2			
.	COCC6		TIYIN		MEANS CO			
.	COCC7		TTYOUT		MEANS CO			
.	COC10		LCCINTNT		EQUALS 42			
.	COC11		LCCOUTINT		EQUALS 62			
.	COC12		LOCTTYIN		EQUALS 40			
.	COC13		LCCTTYOUT		EQUALS 60			
.	COC14		NTERCOM		ENTRY	00002	61000 00000	ENTERED FROM CALLING PROGRAM
.	COC15				JP COMPROC+2	00003	61000 00006	
.	COC16		COMPROC		ENTRY	00004	61000 00000	
.	COC17				JP COMPROC00	00005	61000 00350	
.	COC20				STR A•W(CPASTOR)	00006	15030 04566	SAVE REGISTERS USED
.	COC21				STR Q•W(CPQSTOR)	00007	14030 04567	
.	COC22				STR B7•L(CPBSTOR)	00010	16710 00130	
.	C0023				STR B6•L(CPB6STOR)	00011	16610 00131	
.	COC24				STR B1•L(CPB6STOR+1)	00012	16110 00132	
.	COC25				STR B2•L(CPB6STOR+2)	00013	16210 00133	
.	COC26				STR B3•L(CPB6STOR+3)	00014	16310 00134	
.	COC27				STR B4•L(CPB6STOR+4)	00015	16410 00135	
.	COC30				STR B5•L(CPB6STOR+5)	00016	16510 00136	
.	COC31				12000 MCPINIT	00017	12000 06173	SET FOR REAL MCP-MAKE RJP FOR PHONY
.	COC32				ENT Q•12000	00020	10000 12000	SET SW IN INTOUT TO NO-OP
.	COC33				STR Q•U(INTOUTSWO)	00021	14020 00142	
.	COC34				ENT A•35	00022	11000 00035	
.	COC35				STR A•L(CASESET)	00023	15010 00730	INITIALIZE CASE SWITCH
.	COC36				ENT A•61000	00024	11000 61000	
.	COC37				STR A•U(INTOUTSW)	00025	15020 00143	
.	COC40				ENT B7•L(NTERCOM)	00026	1271C 00002	GET PARAMETER WORD ADDRESS
.	COC41				RPL Y+1•L(NTERCOM)	00027	36010 00002	ADJUST EXIT LOCATION
.	COC42				ENT Q•1	00030	1000C 00001	
.	C0043				RPL LP•W(ACTIVITY)	00031	44030 04574	CLEAR ALL BUT ATTENTION BIT
.	COC44				ENT Q•12000	00032	10000 12000	
.	COC45				ENT A•W(B7)•ANOT	00033	11537 00000	TEST FOR BOTH SPEC TABLES =0
.	COC46				ENT Q•61000	00034	10000 61000	
.	COC47				STR Q•U(INTCOMO3+4)	00035	14020 00114	
.	COC50				STR A•W(SPECTBLS)	00036	15030 04576	NO - STORE SPEC TABLE ADDRESSES
.	COC51				ENT A•L(B7)•AZERO	00037	11417 00000	IS INPUT SPEC TABLE ADDRESS=0
.	COC52				JP INTCOM01	00040	61000 00043	NO
.	COC53				ENT A•INCOMP	00041	11000 00010	YES TURN ON INPUT COMPLETION BIT
.	COC54				RSE SET•W(ACTIVITY)	00042	54030 04574	
.	COC55		INTCOM01		ENT A•U(B7)•ANOT	00043	11527 00000	IS OUTPUT SPEC TABLE ADDRESS = 0
.	COC56				JP INTCOM03	00044	61000 00110	YES
.	COC57				STR A•L(INTCOM04)	00045	15010 00057	

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/1/65

CAROS    L1 ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     COC60               CL   W(PRINTSW)                          00046  16030 044C2
   .     COC61               ENT  B7•U(B7)                            00047  12727 000C0
   .     COC62               ENT  A•UX(B7+1)•APOS                     00050  11667 00CC1  LOOK AT PRINT ONLY BIT
   .     COC63               CP   A•                                  00051  15040 0C0C0
   .     COC64               JP   $+3•AZERO                           00052  60400 00055  IF ZERO SKIP PAST REST
   .     COC65               RSH  A•I•ANOT                            00053  02500 0C0C1  IF NOT SHIFT OFF BIT
   .     COC66               STR  A•CPL(PRINTSW)                      00054  15050 04402  NOW IF ZERO SET SWITCH
   .     COC67               CL   W(BUFFCOUNT)                        00055  16030 046C0
   .     COC70               RJP  PUTFORMINT                          00056  65000 02072
   .     COC71 INTCCMC4      C    C                                   00057  00000 000C0
   .     COC72               JP   ERROR                               00060  61000 03746
   .     COC73               ENT  A•03                                00061  11000 0C0C3
   .     COC74               STR  A•W(BUFFER-3)                       00062  15030 04740
   .     COC75               STR  A•W(BUFFER-2)                       00063  15030 04741
   .     COC76               ENT  A•04                                00064  11000 000C4
   .     C0077               STR  A•W(BUFFER-1)                       00065  15030 04742
   .     C01C0               ENT  A•BUFFER-3                          00066  11000 04740
   .     C01C1               STR  A•L(BUFOUTWC)                       00067  15010 00537
   .     C01C2               AOO  A•L(BUFFCOUNT)                      00070  20010 046C0
   .     C01C3               AOO  A•2                                 00071  20000 000C2
   .     C01C4               STR  A•U(BUFOUTWO)                       00072  15020 00537  STORE FINAL AOORESS OF OUTPUT
                                                                                         BUF
   .     C01C5               ENT  A•12000                             00073  11000 120C0
   .     C01C6               STR  A•U(KILLOUTSW)                      00074  1502C 00240
   .     C01D7               ENT  A•W(PRINTSW)•AZERO                  00075  1143C 044C2
   .     C011C               JP   $+3                                 00076  6100C 001C1
   .     C0111               IN   KEYIN•W(BUFINWO)•MONITUR            00077  75130 00540
   .     C0112               CUT  KEYOUT•W(BUFOUTWO)•MONITOR          00100  76130 00537
   .     C0113               RJP  WESTOUT•KEY3                        00101  65300 00630
   .     C0114               JP   $+2•KEY1                            00102  61100 0C1C4
   .     C0115               RJP  HSPOUT                              00103  65000 04115  PRINT OUTPUT ON PRINTER
   .     C0116               ENT  A•W(PRINTSW)•AZERO                  00104  11430 044C2
   .     C0117               JP   INTEXIT                             0U105  6100C UC120
   .     C0120 INTCCMC2      CL   W(BUFSLOT)                          00106  16030 04575
   .     C0121               JP   NIL                                 00107  61000 000C0
   .     C0122 INTCCMO3      ENT  A•PUTCOMP                           00110  11000 0C0C4
   .     C0123               RSE  SET•W(ACTIVITY)                     00111  54030 04574
   .     C0124               IN   KEYIN•W(BUFINWD)•MONITOR            00112  75130 00540
   .     C0125               RJP  WESTIN•KEY3                         U0113  65300 00624
   .     C0126               JP   $+3                                 00114  61000 00117  SWITCH FOR VACUUOUS INTERCOM

   .     C0127               CUT  KEYOUT•W(CRBUF)                     00115  74130 00541
   .     C0130               RJP  WESTOUT•KEY3                        U0116  65300 UC630
   .     C0131               JP   INTCOMO2                            00117  61000 001C6
   .     C0132 INTEXIT       NO-OP                                    00120  12000 0CCC0
   .     C0133               JP   $-1•KEYOUT•ACTIVEOUT                00121  63100 00120  WAIT TILL MESSAGE OONE
   .     C0134               JP   $-2•TTYOUT•ACTIVEOUT                U0122  63000 0C120
   .     C0135               IN   KEYIN•W(BUFINWO)•MONITOR            00123  75130 00540
   .     C0136               RJP  WESTIN•KEY3                         00124  6530C 00624
   .     C0137               ENT  A•W(CPASTOR)                        00125  11030 04566  RESTORE REGISTERS
   .     C0140               ENT  Q•W(CPQSTOR)                        00126  10030 04567
   .     C0141               CL   W(SPECTBLS)                         00127  1603C 04576
   .     C0142 CFBSTCR       ENT  B7•NIL                              00130  12700 0C0C0
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/1/65

CARDS    LL ID LABEL       TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C0143 CFB6STOR       ENT  B6•NIL                              00131  12600 00000
   .     C0144                ENT  B1•NIL                              00132  12100 00000
   .     C0145                ENT  B2•NIL                              00133  12200 00000
   .     C0146                ENT  B3•NIL                              00134  12300 00000
   .     C0147                ENT  B4•NIL                              00135  12400 00000
   .     C0150                ENT  B5•NIL                              00136  12500 00000
   .     C0151                JP   L(NTERCOM)                          00137  61010 00002  NORMAL EXIT
   .     C0152 INTOUT         ENTRY                                    00140  61000 00000  ENTERED FROM HARDWARE INTERRUP
                                                                                           T
   .     C0153                STR  A•W(INTASTOR)                       00141  15030 04572  SAVE REGISTERS USED
   .     C0154 INTOUTSWO      JP   INTOUTO35                           00142  61000 00164
   .     C0155 INTOUTSW       JP   INTOUTO1                            00143  61000 00147  SET TO NO-OP BY ERROR
   .     C0156                ENT  A•61000                             00144  11000 61000
   .     C0157                STR  A•U(INTOUTSW)                       00145  15020 00143  RESET SWITCH TO JUMP
   .     C0160                JP   INTOUTO3                            00146  61000 00160
   .     C0161 INTOUTO1       ENT  A•L(SPECTBLS)•ANOT                  00147  11510 04576
   .     C0162                JP   INTOUTO5                            00150  61000 00173
   .     C0163                ADD  A•1                                 00151  20000 00001
   .     C0164                STR  A•L(INTOUTO2)                       00152  15010 00153  CARRIAGE RETURN BIT
   .     C0165 INTOUTO2       ENT  A•W(NIL)                            00153  11030 00000
   .     C0166                SEL  CL•W(CRCOMP)•ANOT                   00154  52530 00622
   .     C0167                JP   INTOUTO4                            00155  61000 00170  WANT ONLY LINE FEED
   .     C0170                CUT  KEYOUT•W(CRBUF)                     00156  74130 00541  WANT CARRIAGE RETURN
   .     C0171                RJP  WESTOUT•KEY3                        00157  65300 00630
   .     C0172 INTOUTO3       ENT  A•PUTCOMP                           00160  11000 00004  TURN ON OUTPUT COMPLETION BIT
   .     C0173                RSE  SET•W(ACTIVITY)                     00161  54030 04574
   .     C0174                ENT  A•61000                             00162  11000 61000
   .     C0175                STR  A•U(KILLOUTSW)                      00163  15020 00240  DESABLE KILLING OUTPUT
   .     C0176 INTOUTO35      IN   KEYIN•W(BUFINWD)•MONITOR            00164  75130 00540  SET UP TO READ NEXT
   .     C0177                RJP  WESTIN•KEY3                         00165  65300 00624  IF WESTFORD ACTIVE, ENABLE
   .     C0200                ENT  A•W(INTASTOR                        00166  11030 04572  RESTORE REGISTERS
   .     C0201                RILJP     L(INTOUT)                      00167  60110 00140
   .     C0202 INTOUTO4       CUT  KEYOUT•W(LFBUF)                     00170  74130 00542
   .     C0203                RJP  WESTOUT•KEY3                        00171  65300 00630
   .     C0204                JP   INTOUTO3                            00172  61000 00160
   .     C0205 INTOUTO5       CUT  KEYOUT•W(CROUT)                     00173  74130 00546  IF NO INPUT, ISSUE C/R
   .     C0206                RJP  WESTOUT•KEY3                        00174  65300 00630
   .     C0207                JP   INTOUTO3                            00175  61000 00160
   .     C0210 FSHIFT         EQUALS     33
   .     C0211 LSHIFT         EQUALS     37
   .     C0212 TTYININT       ENTRY                                    00176  61000 00000  ENTERED FORM CO HARDWARE
   .     C0213                STR  A•W(TTYASTOR)                       00177  15030 00230
   .     C0214                STR  Q•W(TTYQSTOR)                       00200  14030 00231  SAVE REGISTERS A,Q,B7
   .     C0215                STR  B7•L(TTYBSTOR)                      00201  16710 00216
   .     C0216                ENT  Q•37                                00202  10000 00037
   .     C0217                ENT  A•W(TTYINWD)                        00203  11030 00232
   .     C0220                COM  MASK•LSHIFT•ANOT                    00204  43500 00037  TEST FOR LETTER SHIFT
   .     C0221                JP   TTYIN2                              00205  61000 00220
   .     C0222                COM  MASK•FSHIFT•ANOT                    00206  43500 00033  TEST FOR FIGURE SHIFT
   .     C0223                JP   TTYIN3                              00207  61000 00221
   .     C0224                ENT  B7•A                                00210  12770 00000  NEITHER. TRANSLATE TO FD
   .     C0225 TTYIN1         ENT  A•L(TTYTBL+B7)                      00211  11017 06073  SET BY LAST CASE SHIFT
   .     C0226                STR  A•L(BUFIN)                          00212  15010 04577  PUT FD CHARACTER IN INPUT BUFF
```

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                    ........................   SPURT OUTPUT NO. 210   ........................
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CARDS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

                                                                                          ER
   .     C0227                RJP  INTIN                              00213  65000 00234  PERFORM HAYSTACK INTERRUPT RTN

   .     C0230 TTYIN4         ENT  A*W(TTYASTOR)                      00214  11030 00230
   .     C0231                ENT  Q*W(TTYQSTOR)                      00215  10030 00231  RESTORE REGISTERS
   .     C0232 TTYBSTCR       ENT  B7*NIL                             00216  12700 00000
   .     C0233                RILJP     L(TTYININT)                   00217  60110 00176
   .     C0234 TTYIN2         ENT  A*TTYTBL*SKIP                      00220  11100 06073  SET FOR APPROPRIATE TRANSLATIO
                                                                                          N
   .     C0235 TTYIN3         ENT  A*TTYTBLL                          00221  11000 06133  TABLE, LETTER OR FIGURE
   .     C0236                STR  A*L(TTYIN1)                        00222  15010 00211
   .     C0237                ENT  A*61000                            00223  11000 61000
   .     C0240                STR  A*U(INTOUTSWO)                     00224  15020 00142
   .     C0241                CUT  TTYOUT*W(TXYBUF)*MONITOR           00225  76030 00227
   .     C0242                JP   TTYIN4                             00226  61000 00214
   .     C0243 TXYBUF         U-TAG     TTYINWC*TTYINWO               00227  00232 00232
   .     C0244 TTYASTCR       0    0                                  00230  00000 00000
   .     C0245 TTYQSTCR       0    0                                  00231  00000 00000
   .     C0246 TTYINWO        C    0                                  00232  00000 00000
   .     C0247                STR  A*U(COMPROCSW)                     00233  15020 00422
   .     C0250 INTIN          ENTRY                                   00234  61000 00000  ENTERED FROM HARDWARE INTERRUP
                                                                                          T
   .     C0251                STR  A*W(INTASTOR)                      00235  15030 04572  SAVE REGISTERS USED
   .     C0252                STR  Q*W(INTQSTOR)                      00236  14030 04573
   .     C0253                STR  B7*L(INTBSTOR)                     00237  16710 00321
   .     C0254 KILLCUTSW      JP   KILLOUT1+2                         00240  61000 00261  NOP WHEN KILLING OUTPUT
   .     C0255                ENT  A*61000                            00241  11000 61000  RESET KILLOUTSW
   .     C0256                STR  A*U(KILLOUTSW)                     00242  15020 00240
   .     C0257                STR  A*U(INTINSW)                       00243  15020 00312  SET TO KILL NORMAL OUTPUT
   .     C0260                ENT  A*L(SPECTBLS)*ANOT                 00244  11510 04576  IS INPUT EXPECTED
   .     C0261                JP   KILLOUT2                           00245  61000 00340  NO
   .     C0262                ADD  A*1                                00246  20000 00001  YES- SEE IF WANT CR
   .     C0263                STR  A*L($+1)                           00247  15010 00250
   .     C0264                ENT  A*W(NIL)                           00250  11030 00000
   .     C0265                SEL  CL*W(CRCOMP)*ANOT                  00251  52530 00622
   .     C0266                JP   KILLOUT3                           00252  61000 00343  NO - WANT LINE FEED
   .     C0267                ENT  A*W(BUFIN)                         00253  11030 04577
   .     C0270                STR  A*W(TOPCR+1)                       00254  15030 00577
   .     C0271                CUT  KEYOUT*W(CRBUFIN)*MONITOR          00255  76130 00550
   .     C0272                RJP  WESTOUT*KEY3                       00256  65300 00630
   .     C0273 KILLCUT1       ENT  A*PUTCOMP                          00257  11000 00004  SET OUTPUT COMPLETION
   .     C0274                RSE  SET*W(ACTIVITY)                    00260  54030 04574  BIT IN ACTIVITY WORD
   .     C0275                ENT  Q*77                               00261  10000 00077  EXAMINE NEW CHARACTER
   .     C0276                ENT  A*W(BUFIN)                         00262  11030 04577
   .     C0277                ENT  B7*L(BUFSLOT)                      00263  12710 04575
   .     C03C0                STR  A*W(BUFFER+B7)                     00264  15037 04743
   .     C03C1                BSK  B7*BUFLMT                          00265  71700 00453
   .     C03C2                JP   INTIN01                            00266  61000 00272
   .     C03C3                ENT  A*01                               00267  11000 00001  ENTER BUFFER EXCEEDED CODE
   .     C03C4                STR  B0*L(BUFSLOT)                      00270  16010 04575  CLEAR BUFSLOT IF BUFFER EXCEED
                                                                                          ED
   .     C03C5                RILJP     ERROR                         00271  60100 03746
   .     C03C6 INTINC1        STR  B7*L(BUFSLOT)                      00272  16710 04575
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                    ..........................   SPURT OUTPUT NO. 210      ..........................
                                  NTERCOM              ADAMS-ASSOC•7/1/65

CARDS    L1 IO LABEL      TA STATEMENT                                  LOC    F JKB Y      NOTES

   .     C03C7                COM  MASK•CRWORD•ANOT                     00273  43500 000C4  IS IT CARRIAGE RETURN
   .     C0310                JP   INTINO29                             00274  61000 00323
   .     C0311                ENT  B7•61000                             00275  12700 610C0  IF NOT CR
   .     C0312                STR  B7•UI1NTINO3)                        00276  16720 00325
   .     C0313                COM  MASK•QMWORD•ANOT                     00277  43500 00054  IS IT QUESTION MARK
   .     C0314                JP   INTINO4                              00300  61000 00332
   .     C0315                COM  MASK•ATTNWOUC•ANOT                   00301  43500 00057
   .     C0316                JP   INTINO5                              00302  61000 00335
   .     C0317                COM  MASK•ATTNWOLC•ANOT                   00303  43500 00077
   .     C0320                JP   INTINO5                              00304  61000 00335
   .     C0321                COM  MASK•SPECWD•ANOT                     00305  43500 00076
   .     C0322                JP   INTINO35                             00306  61000 00327  IF LIMIT ACCEPTED
   .     C0323                ENT  Q•61000                              00307  10000 61000  SET TO TEST FOR CHAR REALLY OU
                                                                                           T
   .     C0324                STR  Q•UICOMPROCSW)                       00310  14020 00422
   .     C0325                STR  Q•U(INTOUTSWO)                       00311  14020 00142
   .     C0326 INTINSW        12000      INTINO2                        00312  12000 00315  NORMALLY NO-OP, JUMP AFTER KIL
                                                                                           L
   .     C0327                CUT  KEYOUT•WIBUFINWD)•MONITOR            00313  76130 00540  IF NONE TYPE BACK
   .     C0330                RJP  WESTOUT•KEY3                         00314  65300 00630
   .     C0331 INTINC2        ENT  Q•12000                              00315  10000 12000
   .     C0332                STR  Q•UIINTINSW)                         00316  14020 00312  RESET SWITCH TO NO-OP
   .     C0333                ENT  A•W(INTASTOR)                        00317  11030 04572  RESTORE REGISTERS
   .     C0334                ENT  Q•W(INTQSTOR)                        00320  10030 04573
   .     C0335 INTBSTCR       ENT  B7•NIL                               00321  12700 000C0
   .     C0336                RILJP      LIINTIN)                       00322  60110 00234
   .     C0337 INTINC29       IN   KEYIN•WIBUFINWO)•MONITOR             00323  75130 00540
   .     C0340                RJP  WESTIN•KEY3                          00324  65300 00624
   .     C0341 INTINC3        JP   INTINO35                             00325  61000 00327  SWITCH FOR CR NOP AFTER LIMIT
   .     C0342                JP   INTINO2                              00326  61000 00315
   .     C0343 INTINC35       ENT  A•INCOMP                             00327  11000 00010  SET INPUT COMPLETION BIT
   .     C0344                RPL  A+Y•WIACTIVITY)                      00330  24030 04574
   .     C0345                JP   INTINO2                              00331  61000 00315
   .     C0346 INTINC4        ENT  A•DELBIT                             00332  11000 00002
   .     C0347                RSE  SET•WIACTIVITY)                      00333  54030 04574
   .     C0350                JP   INTINO2                              00334  61000 00315
   .     C0351 INTINC5        ENT  A•ATTNBIT                            00335  11000 00001
   .     C0352                RSE  SET•WIACTIVITY)                      00336  54030 04574
   .     C0353                JP   INTINO2                              00337  61000 00315
   .     C0354 KILLCUT2       CUT  KEYOUT•WICROUT)•MONITOR              00340  76130 00546
   .     C0355                RJP  WESTOUT•KEY3                         00341  65300 00630
   .     C0356                JP   KILLOUT1                             00342  61000 00257
   .     C0357 KILLCUT3       ENT  A•WIBUFIN)                           00343  11030 04577
   .     C0360                STR  A•WILFIN+1)                          00344  15030 006C1
   .     C0361                CUT  KEYOUT•WILFBUFIN)•MONITOR            00345  76130 00551
   .     C0362                RJP  WESTOUT•KEY3                         00346  65300 00630
   .     C0363                JP   KILLOUT1                             00347  61000 00257
   .     C0364 CCMPRCC00      STR  B6•LIMCPB6STOR)                      00350  16610 00455
   .     C0365                STR  B7•LIMCPB7STOR)                      00351  16710 00456
   .     C0366                STR  A•WIMCPASTOR)                        00352  15030 04570  SAVE REGISTERS USED
   .     CU367                STR  Q•WIMCPQSTOR)                        00353  14030 04571
   .     C0370                JP   $+2•KEY3                             00354  61300 00356
   .     C0371                JP   COMPROCO9                            00355  61000 00373  ONLY HAYSTACK ACTIVE
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CARDS	L1 IO LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C0372	ENT	A•W(LOCTTYIN)	00356	11030 00040	
.	C0373	SUB	A•W(RJPTTYIN)•ANOT	00357	21530 00725	
.	C0374	JP	COMPROC0B	00360	61000 004C7	
.	C0375	ENT	A•60000	00361	11000 600C0	WESTFORD ACTIVE - DISABLE HAYS TACK
.	C0376	STR	A•U(LOCININT)	00362	15020 00042	
.	C0377	STR	A•U(LOCOUTINT)	00363	15020 00062	
.	C04C0	PUT	W(RJPOUT)•W(LOCTTYOUT)	00364	10030 04622	
				00365	14030 00060	
.	C04C1	PUT	W(RJPTTYIN)•W(LOCTTYIN)	00366	10030 00725	
				00367	14030 00040	
.	C04C2	TERM	KEYIN•INPUT	00370	66100 000C0	
.	C04C3	IN	TTYIN•W(TXYBUF)•MONITOR	00371	75030 00227	
.	C04C4	JP	COMPROC0B	00372	61000 00407	
.	C04C5 CCMPRCCC9	ENT	A•W(LOCININT)	00373	11030 00042	
.	C04C6	SUB	A•W(RJPIN)•ANOT	00374	21530 04621	
.	C0407	JP	COMPROC0B	00375	61000 004C7	
.	C0410	ENT	A•60000	00376	11000 60000	
.	C0411	STR	A•U(LOCTTYOUT)	00377	15020 00060	
.	C0412	STR	A•U(LOCTTYIN)	00400	15020 00040	
.	C0413	PUT	W(RJPIN)•W(LOCININT)	00401	10030 04621	
				00402	14030 00042	
.	C0414	PUT	W(RJPOUT)•W(LOCOUTINT)	00403	10030 04622	
				00404	14030 00062	
.	C0415	TERM	TTYIN•INPUT	00405	66000 000C0	
.	C0416	IN	KEYIN•W(BUFINWO)•MONITOR	00406	75130 00540	
.	C0417 CCMPRCCC8	ENT	A•W(ACTIVITY)•ANOT	00407	11530 04574	ANY ACTIVITY COMPLETED
.	C0420	JP	COMPROC02	00410	61000 00451	NO-GO TO EXIT
.	C0421	CL	Q•	00411	10000 000C0	
.	C0422	RSH	AQ•1•QPOS	00412	03200 00001	IS ATTENTION BIT ON
.	C0423	JP	COMPROC03	00413	61000 00460	YES
.	C0424	RSH	AQ•1•QPOS	00414	03200 00001	IS DELETE BIT ON
.	C0425	JP	COMPROC04	00415	61000 00475	YES
.	C0426	RSH	AQ•1•QNEG	00416	03300 000C1	IS OUTPUT COMPLETION BIT ON
.	C0427	JP	COMPROC02	00417	61000 00451	NO - GO TO EXIT
.	C0430	JP	COMPROC02•AZERO	00420	60400 00451	IS INPUT COMPLETION BIT ON
.	C0431	CL	W(ACTIVITY)	00421	16030 04574	IF BOTH ON, TURN THEM OFF
.	C0432 CCMPRCCSW	JP	COMPROC07	00422	61000 00432	SET TO NO-OP BY LIMIT ERROR
.	C0433	ENT	Q•61000	00423	10000 610C0	RESET TO JUMP
.	C0434	STR	Q•U(COMPROCSW)	00424	14020 00422	
.	C0435	CUT	KEYOUT•W(HOKBUF)	00425	74130 00547	TYPE ACCEPTED$
.	C0436	RJP	WESTOUT•KEY3	00426	65300 00630	
.	C0437	JP	$+2•KEY1	00427	61100 00431	
.	C0440	RJP	HSPACC	00430	65000 04216	
.	C0441	JP	INTEXIT	00431	61000 00120	
.	C0442 CCMPRCCC7	ENT	A•L(SPECTBLS)•ANOT	00432	11510 04576	IS INPUT SPLC TABLE ADDRESS=0
.	C0443	JP	INTEXIT	00433	61000 00120	
.	C0444	STR	A•L(COMPROC06)	00434	15010 00442	
.	C0445	ENT	A•W(BUFSLOT)	00435	11030 04575	
.	C0446	STR	A•W(SLOTSTOR)	00436	15030 04403	SAVE BUFSLOT
.	C0447	SUB	A•1•ANOT	00437	21500 00001	
.	C0450	JP	COMPROC01	00440	61000 00444	IF SO, SKIP TO RETURN PROCEDURE

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    LI IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C0451                RJP  INFORMINT                          00441  65000 00734
   .     C0452 CCMPRCCC6      C    0                                  00442  00000 000C0
   .     C0453                JP   ERROR                              00443  61000 03746  BAD OATA. JUMP TO ERROR ROUTIN
                                                                                           E
   .     C0454 CCMPRCCC1      CUT  KEYOUT•W(STOPBUF)                  00444  74130 00545  GOOO OTAA  IYPE STOP SYMBOL
   .     C0455                RJP  WESTOUT•KEY3                       00445  65300 00630
   .     C0456                JP   $+2•KEY1                           00446  61100 00450
   .     C0457                RJP  HSPGIN                             00447  65000 04172
   .     C0460                JP   INTEXIT                            00450  61000 00120  RETURB TO CALLING PROGRAM
   .     C046I CCMPRCCC2      RPL  Y+1•L(COMPROC)                     00451  36010 0C0C4
   .     C0462                STR  A•L(INTCOMO2+1)                    00452  15010 001C7
   .     C0463                ENT  A•W(MCPASTOR)                      00453  11030 04570
   .     C0464                ENT  Q•W(MCPQSTOR)                      00454  10030 04571
   .     C0465 MCPB6STCR      ENT  B6•NIL                             00455  12600 000C0
   .     C0466 MCPB7STOR      ENT  B7•NIL                             00456  12700 0C0C0
   .     C0467                JP   L(INTCOMO2+1)                      00457  61010 00107  EXIT
   .     C0470 CCMPRCCC3      CL   W(ACT(VITY)                        00460  16030 04574
   .     C0471                ENT  C•WIBUFSLOT)                       00461  10030 04575
   .     C0472                STR  Q•W(SLOTSTOR)                      00462  14030 04403
   .     C0473                IN   KEYIN•WIBUFINWO)•MONITOR           00463  75130 00540
   .     C0474                CUT  KEYOUT•W(ATTNBUF)                  00464  74130 00544
   .     C0475                RJP  WESTOUT•KEY3                       00465  65300 00630
   .     C0476                JP   $+2•KEY1                           00466  61100 00470
   .     C0477                RJP  HSPATTN                            00467  65000 04204
   .     C05C0                CL   WIBUFSLOT)                         00470  16030 04575
   .     C05C1                ENT  B0•0                               00471  12000 000C0
   .     C05C2                JP   $-1•KEYOUT•ACTIVEOUT               00472  63100 00471  WAIT TILL OONE
   .     C05C3                JP   $-2•TTYOUT•ACTIVEOUT               00473  63000 00471
   .     C05C4                JP   LICOMPROC)                         00474  61010 00004
   .     C05C5 CCMPRCCC4      CL   W(ACTIVITY)                        00475  16030 04574
   .     C0506                ENT  Q•W(BUFSLOT)                       00476  10030 04575
   .     C05D7                STR  Q•WISLOTSTOR)                      00477  14030 04403
   .     C0510                JP   $+2•KEY1                           00500  61100 0C502
   .     C0511                RJP  HSPNOTACC                          00501  65000 04233
   .     C0512                CL   WIBUFSLOT)                         00502  16030 04575
   .     C0513                RJP  SPACERITE                          00503  65000 00524
   .     C0514                ENT  A•BUFFER+17                        00504  11000 04762
   .     C0515                ADD  A•B7                               00505  20007 00000
   .     C0516                STR  A•U(DELBUF)                        00506  15020 00543
   .     C0517                ENT  B6•17                              00507  12600 00017
   .     C0520                ENT  A•WIBOTDEL+B6)                     00510  11036 00552
   .     C0521                STR  A•WIBUFFER+B6)                     00511  15036 04743  STORE NOT ACCEPTEO
   .     C0522                BJP  B6•$-2                             00512  72600 00510
   .     C0523                ENT  A•05                               00513  11000 000C5
   .     C0524                RPT  B7•AOV                             00514  70107 00000
   .     C0525                STR  A•WIBUFFER+20)                     00515  15030 04763
   .     C0526                ENT  Q•12000                            00516  10000 12000
   .     C0527                STR  Q•UIKILLOUTSW)                     00517  14020 00240
   .     C0530                IN   KEYIN•WIBUFINWO)•MONITOR           00520  75130 00540
   .     C0531                CUT  KEYOUT•WIDELBUF)•MONITOR           00521  76130 00543
   .     C0532                RJP  WESTOUT•KEY3                       00522  65300 00630
   .     C0533                JP   COMPROCO2                          00523  61000 00451
   .     C0534 SPACERITE      ENTRY                                   00524  61000 00000
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CAROS	L1 ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C0535			ENT A•UISPECTBLS)•ANOT	00525	11520	04576		
.	C0536			JP SPACE01	00526	61000	00535		
.	C0537			ENT B7•LISPECTBLS)	00527	12710	04576		
.	C0540			ENT A•WI1+B7)	00530	11037	00001		
.	C0541			SEL CL•WICRCOMP)•AZERO	00531	52430	00622		LOOK FOR CR BIT
.	C0542			JP SPACE01	00532	61000	00535		
.	C0543			ENT B7•WIBUFFCOUNT)	00533	12730	04600		WANT LINE FEED
.	C0544			EXIT	00534	61010	00524		
.	C0545	SPACE01		ENT B7•5	00535	12700	00005		
.	C0546			EXIT	00536	61010	00524		
.	C0547	BUFOUTWD		U-TAG BUFFER+800•BUFFER	00537	05063	04743		
.	C0550	BUFINWD		U-TAG BUFIN•BUFIN	00540	04577	04577		
.	C0551	CRBUF		U-TAG TOPCR•BOTCR	00541	00576	00570		
.	C0552	LFBUF		U-TAG BOTCR•BOTCR	00542	00570	00570		
.	C0553	DELBUF		U-TAG BUFFER+17•BUFFER	00543	04762	04743		
.	C0554	ATTNBUF		U-TAG TOPATN•BOTATN	00544	00604	00602		
.	C0555	STOPBUF		U-TAG TOPSTOP•BOTSTOP	00545	00621	00617		
.	C0556	CRCUT		U-TAG BOTCR+1•BOTCR	00546	00571	00570		
.	C0557	HCKBUF		U-TAG TOPSTOP•BOTOK	00547	00621	00605		
.	C0560	CRBUFIN		U-TAG TOPCR+1•BOTCR	00550	00577	00570		
.	C0561	LFBUFIN		U-TAG LFIN+1•LFIN	00551	00601	00600		
.	C0562	BCTDEL		C 05	00552	00000	00005		
.	C0563			O 05	00553	00000	00005		
.	C0564			C 23	00554	00000	00023		
.	C0565			O 24	00555	00000	00024		
.	C0566			O 31	00556	00000	00031		
.	C0567			O 05	00557	00000	00005		
.	C0570			C 06	00560	00000	00006		
.	C0571			O 10	00561	00000	00010		
.	C0572			C 10	00562	00000	00010		
.	C0573			C 12	00563	00000	00012		
.	C0574			C 25	00564	00000	00025		
.	C0575			O 31	00565	00000	00031		
.	C0576			C 12	00566	00000	00012		
.	C0577			C 11	00567	00000	00011		
.	C0600	BCTCR		C 03	00570	00000	00003		
.	C0601			O 04	00571	00000	00004		
.	C0602			C 05	00572	00000	00005		
.	C0603			O 05	00573	00000	00005		
.	C0604			C 05	00574	00000	00005		
.	C0605			O 05	00575	00000	00005		
.	C0606	TCPDEL		C 05	00576	00000	00005		
.	C0607			C 0	00577	00000	00000		
.	C0610	TCPCR		EQUALS TOPDEL					
.	C0611	LFIN		C 03	00600	00000	00003		
.	C0612			C 0	00601	00000	00000		
.	C0613	BCTATN		O 57	00602	00000	00057		
.	C0614			C 04	00603	00000	00004		
.	C0615	TCPATN		O 03	00604	00000	00003		
.	C0616	BCTOK		C 05	00605	00000	00005		
.	C0617			C 05	00606	00000	00005		
.	C0620			C 06	00607	00000	00006		
.	C0621			C 10	00610	00000	00010		

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C0622			0	10	00611	00000	00010		
.	C0623			0	12	00612	00000	00012		
.	C0624			0	25	00613	00000	00025		
.	C0625			0	31	00614	00000	00031		
.	C0626			0	12	00615	00000	00012		
.	C0627			0	11	00616	00000	00011		
.	C063C		BCTSTOP	0	50	00617	00000	00050		
.	C0631			0	04	00620	00000	00004		
.	C0632		TCPSTOP	0	03	00621	00000	00003		
.	C0633		CRCOMP	77776	77777	00622	77776	77777		
.	C0634		LPTCOMP	77767	77777	00623	77767	77777		
.	C0635		ATTNBIT	EQUALS	1					
.	C0636		DELBIT	EQUALS	2					
.	C0637		PLTCOMP	EQUALS	4					
.	C0640		INCOMP	EQUALS	80					
.	C0641		NIL	EQUALS	0					
.	C0642		CRWORD	EQUALS	04					
.	C0643		CMWORD	EQUALS	54					
.	C0644		ATTNWDLC	EQUALS	77					
.	C0645		ATTNWDUC	EQUALS	57					
.	C0646		SPECWD	EQUALS	76					
.	C0647		SPECERR	EQUALS	00					
.	C0650		BUFLMT	EQUALS	299D					
.	C0651		WESTIN	ENTRY		00624	61000	000C0		
.	C0652			TERM	KEY(N•INPUT	00625	66100	00000		
.	C0653			(N	TTY(N•W(TXYBUF)•MONITOR	00626	75030	00227		
.	C0654			EXIT		00627	61010	00624		
.	C0655		WESTOUT	ENTRY		00630	61000	000C0		
.	C0656			STR	B4•L(WEST84STOR)	00631	16410	00677		STORE REGISTERS
.	C0657			STR	B5•L(WEST85STOR)	00632	16510	00700		
.	C0660			STR	B6•L(WEST86STOR)	00633	16610	00701		
.	C0661			STR	B7•L(WEST87STOR)	00634	16710	00702		
.	C0662			STR	A•W(WESTASTOR)	00635	15030	00731		
.	C0663			STR	Q•W(WESTQSTOR)	00636	14030	00732		
.	C0664			ENT	B7•L(WESTOUT)	00637	12710	00630		
.	C0665			ENT	B7•B7-2	00640	12707	77775		
.	C0666			ENT	A•75000	00641	11000	75000		TEST FOR IN BUFFER ACTIVE
.	C0667			ENT	Q•77000	00642	10000	77000		
.	C0670			COM	MASK•U(B7-1)•ANOT	00643	43527	77776		
.	C0671			RJP	WESTIN	00644	65000	00624		
.	C0672			ENT	B6•L(B7)	00645	12617	00000		
.	C0673			ENT	A•U(B6)	00646	11026	00000		
.	C0674			STR	A•L(FOBUFCNT)	00647	15010	00726		SET UP FLOATA BUFFER LENGTH
.	C0675			ENT	B5•L(B6)	00650	12516	00000		
.	C0676			ENT	B6•0	00651	12600	00000		(NITIALIZE TTY BUFFER COUNTER
.	C0677		WESTCHAR	ENT	A•L(B5)	00652	11015	000C0		GET FLDATA CHARACTER
.	C07C0			COM	A•40•YMORE	00653	04700	00040		CHECK
.	C0701			JP	WESTUPCS	00654	61000	00706		UPPER OR
.	C07C2			JP	WESTLRCS	00655	61000	00715		LOWER CASE
.	C07C3		WESTCCNV	ENT	B4•A	00656	12470	000C0		
.	C0704			ENT	A•U(TTYTBL+B4)	00657	11024	06073		CONVERT FLO TO TTY
.	C0705			STR	A•L(TTYBUF+B6)	00660	15016	05417		

CARDS	LI IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C07C6			BSK B6•77777	00661	71600 77777	INCREMENT TTY BUFFER
.	C07C7			BSK B5•L(FOBUFCNT)	00662	71510 00726	CHECK FOR LAST CHAR.
.	C0710			JP WESTCHAR	00663	61000 00652	
.	C0711			ENT A•76130	00664	11000 76130	
.	C0712			ENT Q•77777	00665	10000 77777	
.	C0713			COM MASK•U(B7)•AZERO	00666	43427 00000	CHECK FOR MONITOR
.	C0714			ENT A•74030•SKIP	00667	11100 74030	NO
.	C0715			ENT A•76030	00670	11000 76030	
.	C0716			STR A•U(WESTOUTWO)	00671	15020 00676	
.	C0717			ENT A•TTYBUF	00672	11000 05417	SET UP OUTPUT WORD
.	C0720			STR A•L(TTYOUTWO)	00673	15010 00727	LOWER LIMIT
.	C0721			ENT A•TTYBUF+B6-1	00674	11006 05416	
.	C0722			STR A•U(TTYOUTWO)	00675	15020 00727	UPPER LIMIT
.	C0723	WESTOUTWO		OUT TTYOUT•W(TTYOUTWO)	00676	74030 00727	ACTIVATE OUTPUT
.	C0724	WESTB4STOR		ENT B4•NIL	00677	12400 00000	
.	C0725	WESTB5STOR		ENT B5•NIL	00700	12500 00000	RESTORE BUFFERS
.	C0726	WESTB6STOR		ENT B6•NIL	00701	12600 00000	
.	C0727	WESTB7STOR		ENT B7•NIL	00702	12700 00000	
.	C0730			ENT A•W(WESTASTOR)	00703	11030 00731	
.	C0731			ENT Q•W(WESTQSTOR)	00704	10030 00732	
.	C0732			EXIT	00705	61010 00630	
.	C0733	WESTUPCS		ENT Q•33	00706	10000 00033	UPPER CASE
.	C0734			COM Q•L(CASESET)•YMORE	00707	04310 00730	COMPARE WITH CASE SWITCH
.	C0735			JP WESTCONV	00710	61000 00656	YES
.	C0736			STR Q•L(CASESET)	00711	14010 00730	NO
.	C0737			STR Q•L(TTYBUF+B6)	00712	14016 05417	PUT CASE CHANGE IN OUTPUT
.	C0740			BSK B6•77777	00713	71600 77777	INCR TTY BUFFER
.	C0741			JP WESTCONV	00714	61000 00656	GET PENDING CHAR
.	C0742	WESTLRCS		ENT Q•37	00715	10000 00037	LOWER CASE
.	C0743			SUB Q•L(CASESET)•QNOT	00716	27510 00730	COMPARE WITH CASE SWITCH
.	C0744			JP WESTCONV	00717	61000 00656	YES
.	C0745			ADD Q•L(CASESET)	00720	26010 00730	NO
.	C0746			STR Q•L(CASESET)	00721	14010 00730	
.	C0747			STR Q•L(TTYBUF+B6)	00722	14016 05417	PUT CASE CHANGE IN OUTPUT
.	C0750			BSK B6•77777	00723	71600 77777	INCR TTY BUFFER
.	C0751			JP WESTCONV	00724	61000 00656	GET PENDING CHAR
.	C0752	RJPTTY(N		RJP TTY(NINT	00725	65000 00176	
.	C0753	FOBUFCNT		RESERVE 1	00726	00000 00000	
.	C0754	TTYOUTWO		U-TAG WESTOUTBF•WESTOUTBF	00727	00733 00733	
.	C0755	CASESET		RESERVE 1	00730	00000 00000	
.	C0756	WESTASTOR		RESERVE 1	00731	00000 00000	
.	C0757	WESTQSTOR		RESERVE 1	00732	00000 00000	
.	C0760	WESTOUTBF		C 0	00733	00000 00000	
.	C0761	(NFORM(NT		ENTRY	00734	61000 00000	
.	C0762			STR B5•L((NB5STOR)	00735	16510 00765	
.	C0763			ENT B7•L((NFORMINT)	00736	12710 00734	
.	C0764			RPL Y+1•L((NFORM(NT)	00737	36010 00734	MAKES (NFORMINT ERROR EXIT
.	C0765			ENT B7•L(B7)	00740	12717 00000	LOCATION OF (NPUT SPEC TABLE
.	C0766			STR B7•L((NFO1)	00741	16710 00753	
.	C0767			ENT A•W(1+B7)	00742	11037 00001	LOCATION OF STROAGE ADDRESS
.	C0770			STR A•L((NFO5)	00743	15010 01005	STORE IN CALLING SEQ
.	C0771			SEL CL•W(LMTCOMP)•ANOT	00744	52530 00623	TEST FOR L(MIT CHECK
.	C0772			JP (NFOO	00745	61000 00751	

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC*7/1/65

CARDS    L1 ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C0773               ENT  A*2+B7                              00746  11007 000C2  LOC OF LIMIT WOROS
   .     C0774               STR  A*LIINFO7)                          00747  15010 01010  STORE IN CALLING SEQ OF LMTCHK

   .     C0775               ENT  Q*I2000*SKIP                        00750  10100 12000  SET SWITCH TO GO THRU LMTCHK
   .     C0776 INFOO         ENT  Q*61000                             00751  10000 610C0  SET SWITCH TO SKIP LMTCHK
   .     C0777               STR  Q*U(INFO6)                          00752  14020 01006
   .     C1CC0 INFO1         ENT  Q*W(NIL)                            00753  10030 000C0  BRING FORMAT CODE WORO
   .     C1CCI               CL   A*                                  00754  1I000 0C0C0
   .     C1CC2               LSH  AQ*6                                00755  07000 0C0C6  GET FORMAT CODE
   .     C1CC3               STR  Q*W(INFS1)                          00756  14030 04562
   .     C1CC4               ENT  Q*77                                00757  10000 00077
   .     C1CC5               ENT  B5*INCODMAX                         00760  12500 00010
   .     C1CC6 INFC2         COM  MASK*LIINCODTBL+B5)*ANOT            00761  43515 01014
   .     C1C07               JP   INFO3                               00762  61000 00767
   .     C1C10               BJP  B5*INFO2                            00763  72500 00761
   .     C1C11 INERRX        ENT  A*SPECERR                           00764  11000 000C0  IF CODE NOT FOUNO
   .     C1C12 INB5STOR      ENT  B5*NIL                              00765  12500 000C0
   .     C1C13               EXIT                                     00766  61010 00734
   .     C1C14 INFO3         ENT  A*UIINCOOTBL+B5)*ANOT               00767  11525 01014  OOES FORMAT REQUIRE GREEKCONV

   .     C1015               JP   INFO4                               00770  6I000 0I001
   .     C1C16               ENT  Q*WIINFS1)                          00771  10030 04562
   .     C1L17               SUB  A*2*AZERO                           00772  21400 000C2
   .     C1C20               JP   INFO31                              00773  61000 00776
   .     C1C21               LSH  AQ*6                                00774  07000 000C6
   .     C1C22               JP   INFO4                               00775  61000 01001
   .     C1C23 INFO31        RJP  GREEKCONV                           00776  65000 02203
   .     C1C24               JP   INERRX                              00777  61000 00764
   .     C1C25               ENT  A*W(INTEGER)                        01000  11030 046C5  BRING ALPHA OR PHI
   .     C1C26 INFO4         CL   WIBUFSLOT)                          01001  16030 04575
   .     C1C27               RJP  LITEST+B5)                          01002  65015 01025  TEST BUFFER ANO CONVERT
   .     C1C30               JP   INERRX+1                            01003  61000 00765  BAO OATA - GO TO ERROR EXIT

   .     C1C31               RJP  UISTORE+B5)                         01004  65025 01036  IF SO, STORE IT NORMALLY
   .     C1C32 INFO5         C    0                                   01005  00000 00000  LOCATION OF STORAGE CELLS
   .     C1C33 INFO6         JP   INFO8                               01006  61000 01012  SWITCH FOR LMTCHK
   .     C1C34               RJP  LILMTCHK+B5)                        01007  65015 01036  TEST FOR OATA WITHIN LIMITS
   .     C1C35 INFO7         C    0                                   01010  00000 00000  LOCATION OF 1ST LIMIT WORO
   .     C1C36               JP   INERRX+1                            01011  61000 00765  IF NOT, GO TO ERROR STORE
   .     C1037 INFO8         RPL  Y+1*L(INFORMINT)                    01012  36010 00734
   .     C1C40               JP   INB5STOR                            01013  61000 00765  NORMAL EXIT
   .     C1C41 INCOOMAX      EQUALS    8D
   .     C1C42 INCOCTBL      C    13                                  01014  00000 00013
   .     C1C43               1    35                                  01015  00001 00035
   .     C1044               C    11                                  01016  00000 0C011
   .     C1C45               0    24                                  01017  00000 00024
   .     C1C46               C    36                                  01020  00000 00036
   .     C1C47               I    21                                  01021  00001 00021
   .     C1C50               1    23                                  01022  00001 0C023
   .     C1C51               1    22                                  01023  00001 00022
   .     C1C52               2    34                                  01024  00002 00034
   .     CI053 TEST          0    FLOATIN                             01025  00000 01321
   .     C1C54               C    FIXIN                               01026  00000 01330
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                    ........................   SPURT OUTPUT NO. 210   ........................
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CAROS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

    .    C1C55                C     DECIN                             01027  00000 01127
    .    C1C56                O     HOCTIN                            01030  00000 01140
    .    C1057                C     YESIN                             01031  00000 01273
    .    C1C60                O     INPUTLA                           01032  00000 01077
    .    C1061                C     INPUTNA                           01033  00000 01107
    .    C1C62                O     INPUTMA                           01034  00000 01117
    .    C1C63                C     SPECIN                            01035  00000 01247
    .    C1C64 LMTCHK         U-TAG      FLTSTR•FLTLMT                01036  01617 01712
    .    C1C65                U-TAG      NUMSTR•FIXLMT                01037  01560 01670
    .    C1C66                U-TAG      NUMSTR•OECLMT                01040  01560 01634
    .    C1067                U-TAG      NUMSTR•HOCTLMT               01041  01560 01653
    .    C1C70                U-TAG      NUMSTR•NOLMT                 01042  01560 01630
    .    C1C71                U-TAG      STRING•NOLMT                 01043  01567 01630
    .    C1C72                U-TAG      STRING•NOLMT                 01044  01567 01630
    .    C1073                U-TAG      STRING•NOLMT                 01045  01567 01630
    .    C1C74                U-TAG      NUMSTR•NOLMT                 01046  01560 01630
    .    C1C75 STCRE          EQUALS     LMTCHK
    .    C1C76 INPUTA         ENTRY                                   01047  61000 000C0  ENTRY  EXIT
    .    C1077                ENT   B7•W(BUFSLOT)                     01050  12730 04575  FIRST INTERESTING CHAR-START B
                                                                                          F
    .    C11C0                AOO   A•W(BUFSLOT)                      01051  20030 04575
    .    C11C1                STR   A•L(INPUTA3)                      01052  15010 01071  SET ALPHA-LIMIT
    .    C1102 INPUTA1        ENT   Q•77                              01053  10000 00077  MASK TEST
    .    C1103                ENT   A•WIBUFFER+B7)                    01054  11037 04743  INPUT WORD TO BE TESTED
    .    C11C4                COM   MASK•5•ANOT                       01055  43500 00005  IS THIS A SPACE
    .    C11C5                JP    INPUTA3                           01056  61000 01071  SPACE-GO COUNT
    .    C1106                COM   MASK•4•AZERO                      01057  43400 00004  IS THIS A CARRIAGE RETURN
    .    C11C7                JP    INPUTA2                           01060  61000 01065  CR--EXIT NORMAL RETURN
    .    C1110                CL    WIBUFFER+B7)                      01061  16037 04743  CLEAR OUT CARRIAGE RETURN
    .    C111I                RPL   Y+1•LIINPUTA)                     01062  36010 01047  SET NORMAL RETURN
    .    C1112 INPUTA1A       STR   B7•WIBUFSLOT)                     01063  16730 04575  STORE NEW START OF BUFFER
    .    C1113                EXIT                                    01064  61010 01047
    .    C1114 INPUTA2        ENT   Q•UIB6)                           01065  10026 000C0  UPPER LIMIT
    .    C1115                ENT   A•LIB6)                           01066  11016 000C0  LOWER LIMIT
    .    C1116                COM   AQ•WIBUFFER+B7)•YIN               01067  04437 04743  TEST IF CHAR IN DEF LIMITS
    .    C1117                JP    INPUTA5                           01070  61000 01075  NO--BAD CHAR
    .    C1120 INPUTA3        BSK   B7•0                              01071  71700 00000  TEST ON BUFFER OVERFLOW
    .    C112I                JP    INPUTA1                           01072  61000 01053  OK-RPT WITH NEXT CHAR
    .    C1122                ENT   B6•I                              01073  12600 00001  SET FOR BUFFER
    .    C1123                ENT   A•10•SKIP                         01074  11100 00010
    .    C1124 INPUTA5        CL    B6                                01075  12600 000C0
    .    C1125                JP    INPUTA1A                          01076  61000 01063
    .    C1126 INPUTLA        ENTRY                                   01077  61000 00000  EXIT ENTRY
    .    C1127                ENT   B6•INPUTLA3                       01100  12600 01106
    .    C1130                RJP   INPUTA                            01101  65000 01047  GENERAL TEST
    .    C1131                JP    INPUTLA1+B6                       01102  61006 01104
    .    C1132                RPL   Y+1•LIINPUTLA)                    01103  36010 01077  SET NORMAL RETURN
    .    C1133 INPUTLA1       ENT   A•15                              01104  11000 00015
    .    C1134                EXIT                                    01105  61010 01077
    .    C1135 INPUTLA3       37    5                                 01106  00037 000C5
    .    C1136 INPUTNA        ENTRY                                   01107  61000 000C0  EXIT ENTRY
    .    C1137                ENT   B6•INPUTNA3                       01110  12600 01116
    .    C1140                RJP   INPUTA                            01111  65000 01047  GENERAL TEST
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CARDS	LI (D	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C1141			JP (NPUTNA1+B6	01112	61006 01114	
.	C1142			RPL Y+1•L((NPUTNA)	01113	36010 01107	NORMAL RETURN
.	C1143	INPUTNA1		ENT A•16	01114	11000 00016	
.	C1144			EXIT	01115	61010 01107	
.	C1145	(NPUTNA3		71 57	01116	00071 00057	
.	C1146	INPUTMA		ENTRY	01117	61000 000C0	
.	C1147			ENT B6•(NPUTMA3	01120	12600 01126	
.	C115C			RJP (NPUTA	01121	65000 0(047	GENERAL TEST
.	C1151			JP (NPUTMA1+B6	01122	61006 01124	
.	C1152			RPL Y+1•L((NPUTMA)	01123	36010 01117	NPRMAL RETURN
.	C1153	(NPUTMA1		ENT A•17	01124	11000 00017	
.	C1154			EX(T	01125	61010 01117	
.	C1155	(NPUTMA3		77 0	01126	00077 000C0	
.	C1156	DECIN		ENTRY	01127	61000 00000	ENTERED FROM INPREP
.	C1157			ENT A•12	01130	11000 00012	
.	C1160			STR A•W(B(NLMT)	01131	15030 04557	SET UP BCO LIM(T
.	C1161			ENT A•INTRCOB(N	01132	11000 02607	
.	C1162			STR A•L(CONVERT)	01133	15010 04560	SET UP CONVERSION ROUTINE AODR ESS
.	C1163			RJP NUMIN	01134	65000 01151	CHECK NUMBER AND CONVERT
.	C1164			ENT A•07•SK(P	01135	11100 00007	DECIMAL ERRUR
.	C1165			RPL Y+1•L(DEC(N)	01136	36010 01127	NORMAL RETURN
.	C1166			EX(T	01137	61010 01127	
.	C1167	HOCT(N		ENTRY	01140	61000 00000	ENTEREO FROM INPREP
.	C1170			ENT A•80	01141	11000 00010	
.	C1171			STR A•W(B(NLMT)	01142	15030 04557	SET OCTAL NUMBER LIMIT
.	C1172			ENT A•(NTOCTB(N	01143	11000 02543	
.	C1173			STR A•L(CONVERT)	01144	15010 04560	SET UP CONVERSION ROUTINE AOOR ESS
.	C1174			RJP NUM(N	01145	65000 01151	CHECK NUMBER AND CONVERT
.	C1175			ENT A•06•SK(P	01146	11100 00006	OCTAL ERROR
.	C1176			RPL Y+1•L(HOCT(N)	01147	36010 01140	NORMAL RETURN
.	C1177			EX(T	01150	61010 01140	
.	C12C0	NUMIN		ENTRY	01151	61000 00000	ENTERED FROM OECIN OR HOCTIN
.	C1201			ENT A•61000	01152	11000 61000	SET NO C/R SWITCH TO JUMP
.	C12C2			STR A•U(NUM04)	01153	15020 01230	
.	C12C3			CL W(SIGN)	01154	16030 04607	SET SIGN REGISTER TO +
.	C12C4			CL W(IOINTEGER)	01155	16030 04613	CLEAR IOINTEGER WOROS
.	C12C5			CL W(IOINTEGER+1)	01156	16030 04614	
.	C12C6			ENT B7•L(BUFSLOT)	01157	12710 04575	GET CHAR POSITION IN BUFFER (O)
.	C12C7	NUMCC		ENT A•L(BUFFER+B7)	01160	11017 04743	EXAMINE FIRST CHARACTER
.	C1210			ENT Q•77	01161	10000 00077	
.	C1211			COM MASK•SPACE•ANOT	01162	43500 00005	
.	C1212			JP NUM01	01163	61000 01171	
.	C1213			COM MASK•M(NUS•ANOT	01164	43500 00041	IS IT -
.	C1214			JP NUM06	01165	61000 01243	YES - GO TO SET SIGN WORO -
.	C1215			COM MASK•PLUS•ANOT	01166	43500 00042	IS IT +
.	C1216			JP NUM07	01167	61000 01245	YES - GO TO SET SIGN WORO +
.	C1217			JP NUM02-1	01170	61000 01174	
.	C1220	NUM01		BSK B7•BUFLMT	01171	71700 00453	
.	C1221			JP NUM00	01172	61000 01160	
.	C1222			JP NUMERR	01173	61000 01241	

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.......................   SPURT OUTPUT NO. 210   .......................
                  NTERCOM          AOAMS-ASSOC•7/1/65

CARDS   L1 IO LABEL     TA STATEMENT                          LOC    F JKB Y      NOTES

   .    C1223              ENT  B6•90                         01174  12600 00011  NO-SET UP TO EXAMINE 1ST CHAR.
   .    C1224 NLMO2        RSH  AQ•4                          01175  03000 00004  SHIFT OFF BCO PART
   .    C1225              SEL  CP•3•AZERO                    01176  51400 00003  TEST FOR GO
   .    C1226              JP   NUMERR                        01177  61000 01241
   .    C1227              LSH  AQ•4                          01200  07000 00004  BRING BACK BCO
   .    C1230              COM  A•W(BINLMT)•YMORE             01201  04730 04557  TEST AGAINST LIMIT SET BY CALL
                                                                                  ER
   .    C1231              JP   NUMERR                        01202  61000 01241
   .    C1232              RSH  AQ•6                          01203  03000 00006  IF GOOD DIGIT, SHIFT INTO INTE
                                                                                  GER
   .    C1233              STR  Q•WINUMD(G)                   01204  14030 04561
   .    C1234              ENT  Q•W(IOINTEGER+1)              01205  10030 04614
   .    C1235              ENT  A•WIIOINTEGER)                01206  11030 04613
   .    C1236              LSH  AQ•6                          01207  07000 00006  SHIFT 1CHAR INTO IOINTEGER
   .    C1237              STR  A•WIIOINTEGER)                01210  15030 04613
   .    C1240              LSH  AQ•240                        01211  07000 00030
   .    C1241              ENT  Q•WINUMDIG)                   01212  10030 04561
   .    C1242              LSH  AQ•6                          01213  07000 00006  SHIFT NEW CHAR INTO IOINTEGER+
                                                                                  1
   .    C1243              STR  A•WIIOINTEGER+1)              01214  15030 04614
   .    C1244              BJP  B6•NUMO3                      01215  72600 01220  KEEP COUNT OF DIGITS IN INTEGE
                                                                                  R
   .    C1245              ENT  A•12000                       01216  11000 12000  IF 10 CHAR, SET NO C/R SWITCH

   .    C1246              STR  A•U(NUMO4)                    01217  15020 01230  TO JUMP TO ERROR
   .    C1247 NLMO3        BSK  B7•BUFLMT                     01220  71700 00453  BUMP BUFFER COUNTER
   .    C1250              ENT  A•LIBUFFER+B7)•SKIP           01221  11117 04743  BRING NEXT CHARACTER
   .    C1251              JP   NUMERR                        01222  61000 01241
   .    C1252              ENT  Q•77                          01223  10000 00077  EXAMINE IT FOR C/R
   .    C1253              COM  MASK•SPACE•ANOT               01224  43500 00005
   .    C1254              JP   NUMO3                         01225  61000 01220
   .    C1255              COM  MASK•04•ANOT                  01226  43500 00004
   .    C1256              JP   NUMO5                         01227  61000 01232
   .    C1257 NLMO4        JP   NUMO2                         01230  61000 01175  NO C/R SWITCH
   .    C1260              JP   NUMERR                        01231  61000 01241
   .    C1261 NLMO5        CL   WIBUFFER+B7)                  01232  16037 04743  CLEAR OUT C/R IN BUFFER
   .    C1262              BSK  B7•BUFLMT                     01233  71700 00453
   .    C1263              JP   NUMO8                         01234  61000 01236
   .    C1264              JP   NUMERR                        01235  61000 01241
   .    C1265 NLMO8        RJP  LICONVERT)                    01236  65010 04560  PERFORM APPROPRIATE CONVERSION

   .    C1266              JP   NUMERR                        01237  61000 01241
   .    C1267              RPL  Y+1•L(NUMIN)                  01240  36010 01151
   .    C1270 NLMERR       STR  B7•WIBUFSLOT)                 01241  16730 04575
   .    C1271              EXIT                               01242  61010 01151
   .    C1272 NLMO6        ENT  A•1                           01243  11000 00001  IF 1ST CHAR -, SET SIGN WORD
   .    C1273              STR  A•WISIGN)                     01244  15030 04607
   .    C1274 NLMO7        ENT  B6•90                         01245  12600 00011
   .    C1275              JP   NUMO3                         01246  61000 01220  THEN GO TO GET NEXT CHARACTER

   .    C1276 SPECIN       ENTRY                              01247  61000 00000  ENTERED FROM INPREP
   .    C1277              STR  A•LISPECO1)                   01250  15010 01254  STORE PHI IN TEST INST.
   .    C1300              ENT  B7•LIBUFSLOT)                 01251  12710 04575
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CARDS    LI ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C13C1              ENT  A•W(BUFFER+B7)                 01252  11037 04743  GET CHAR FRUM BUFFER
   .     C13C2              ENT  Q•77                           01253  10000 00077
   .     C13C3 SPECO1       COM  MASK•O•AZERO                   01254  43400 00000  TEST FOR EQUAL TO PHI
   .     C13C4              JP   SPECO2                         01255  61000 01271
   .     C13C5              STR  A•W(INTEGER)                   01256  15030 04605  IF SO, STORE IT
   .     C13C6              BSK  B7•BUFLMT                      01257  71700 00453
   .     C13C7              ENT  A•W(BUFFER+B7)•SKIP            01260  11137 04743
   .     C1310              JP   SPECO3                         01261  61000 01270
   .     C1311              COM  MASK•O4•AZERO                  01262  43400 00004  TEST IT FOR C/R
   .     C1312              JP   SPECO2                         01263  61000 01271
   .     C1313              CL   W(BUFFER+B7)                   01264  16037 04743  IS SO, CLEAR IT IN BUFFER
   .     C1314              STR  B7•W(BUFSLOT)                  01265  16730 04575
   .     C1315              RPL  Y+1•L(SPECIN)                  01266  36010 01247  AOJUST EXIT LOCATION
   .     C1316              EXIT                                01267  61010 01247
   .     C1317 SPECO3       ENT  A•01•SKIP                      01270  11100 00001  BUFLMT ERROR
   .     C1320 SPECO2       ENT  A•10                           01271  11000 00010  IF DISCREPANCY, ENTER ERROR CO
                                                                                    DE
   .     C1321              EXIT                                01272  61010 01247  ERROR EXIT
   .     C1322 YESIN        ENTRY                               01273  61000 00000  ENTERED FROM INPREP
   .     C1323              ENT  B7•L(BUFSLOT)                  01274  12710 04575
   .     C1324 YESOC        ENT  A•W(BUFFER+B7)                 01275  11037 04743
   .     C1325              ENT  Q•77                           01276  10000 00077
   .     C1326              COM  MASK•36•ANOT                   01277  43500 00036  IS IT Y
   .     C1327              JP   YESO2                          01300  61000 01312
   .     C133C              COM  MASK•23•ANOT                   01301  43500 00023
   .     C1331              JP   YESO2+1                        01302  61000 01313
   .     C1332              COM  MASK•SPACE•ANOT                01303  43500 00005
   .     C1333              JP   YESO3                          01304  61000 01315
   .     C1334              ENT  A•11                           01305  11000 00011
   .     C1335              EXIT                                01306  61010 01273  ERROR EXIT
   .     C1336 YESO1        STR  A•W(INTEGER)                   01307  15030 04605  STORE ANSWER CODE
   .     C1337              RPL  Y+1•L(YESIN)                   01310  36010 01273
   .     C1340              EXIT                                01311  61010 01273  NORMAL EXIT
   .     C1341 YESO2        ENT  A•1•SKIP                       U1312  11100 00001
   .     C1342              ENT  A•0                            01313  11000 00000
   .     C1343              JP   YESO1                          01314  61000 01307
   .     C1344 YESO3        BSK  B7•BUFLMT                      01315  71700 00453
   .     C1345              JP   YESOO                          01316  61000 01275
   .     C1346              ENT  A•20                           01317  11000 00020
   .     C1347              EXIT                                01320  61010 01273
   .     C135C FLOATIN      ENTRY                               01321  61000 00000
   .     C1351              RJP  FXPREPEN                       01322  65000 01341
   .     C1352              JP   FLOATIN1                       01323  61000 01325
   .     C1353              RJP  CINFLT                         01324  65000 03275
   .     C1354 FLOATIN1     ENT  A•35•SKIP                      01325  11100 00035
   .     C1355              RPL  Y+1•L(FLOATIN)                 01326  36010 01321
   .     C1356              EXIT                                01327  61010 01321
   .     C1357 FIXIN        ENTRY                               01330  61000 00000
   .     C1360              STR  A•L(FIXIN1)                    01331  15010 01335
   .     C1361              RJP  FXPREPEN                       01332  65000 01341
   .     C1362              JP   FIXIN2                         01333  61000 01336
   .     C1363              RJP  CINFIX                         01334  65000 031C0
   .     C1364 FIXIN1       U-TAG      INTEGER•NIL              01335  04605 000C0
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    L1 (O LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C1365 F(X(N2        ENT  A•36•SK(P                           01336  11100 00036
   .     C1366               RPL  Y+1•L(FIX(N)                        01337  36010 01330
   .     C1367               EX(T                                     01340  61010 01330
   .     C1370 FXPREPEN      ENTRY                                    01341  61000 00000
   .     C1371               CL   W(EXPSIGN)                          01342  16030 04620
   .     C1372               CL   W(S(GN)                             01343  16030 04607
   .     C1373               CLEAR      5•(OINTEGER                   01344  70100 00005
                                                                      01345  16030 04613
   .     C1374               STR  B5•L(FXB5STOR)                      01346  16510 01413
   .     C1375               STR  B4•L(FXB4STOR)                      01347  16410 01412
   .     C1376               ENT  B4•77776                            01350  12400 77776
   .     C1377               ENT  B5•100                              01351  12500 00012  ANO COUNTERS
   .     C1400               ENT  Q•61000                             01352  10000 61000
   .     C1401               STR  Q•U(FXPER1)                         01353  14020 01445
   .     C1402               STR  Q•U(FXO(GF)                         01354  14020 01471
   .     C1403               STR  Q•U(FXSIGN)                         01355  14020 01536
   .     C1404               STR  Q•U(FXS(GN2)                        01356  14020 01547
   .     C1405               STR  Q•U(FXPER)                          01357  14020 01443
   .     C1406               STR  Q•U(FXSIGN1)                        01360  14020 01540
   .     C1407               STR  Q•U(FXE2)                           01361  14020 01522
   .     C1410               ENT  Q•12000                             01362  10000 12000
   .     C1411               STR  Q•U(FXOIG1)                         01363  14020 01454
   .     C1412               CL   B6•                                 01364  12600 00000
   .     C1413               CL   B7•                                 01365  12700 00000
   .     C1414 FX1           BSK  B4•20                               01366  71400 00020
   .     C1415               ENT  A•W(BUFFER+B4)•SK(P                 01367  11134 04743  BRING CHAR FROM BUFFER TO A
   .     C1416               JP   FXERR                               01370  61000 01412
   .     C1417               ENT  Q•X(77777)                          01371  10040 77777
   .     C1420               COM  MASK•05•ANOT                        01372  43500 00005  COMPARE CHAR TO A BLANK
   .     C1421               JP   FX1                                 01373  61000 01366  CHAR = BLANK
   .     C1422               COM  MASK•04•ANOT                        01374  43500 00004  COMPARE CHAR TO A CAR RET
   .     C1423               JP   FXCR                                01375  61000 01415  CHAR = CR
   .     C1424               COM  MASK•75•ANOT                        01376  43500 00075  COMPARE CHAR TO A PERIOO
   .     C1425               JP   FXPER                               01377  61000 01443  CHAR=PERIOO
   .     C1426               COM  A•60•YLESS                          01400  04600 00060  IS 60 LESS THAN OR = TO CHAR

   .     C1427               JP   FX2                                 01401  61000 01404  CHAR NOT OIGIT
   .     C1430               COM  A•72•YLESS                          01402  04600 00072  IS 72 LESS THAN OR = TO CHAR

   .     C1431               JP   FXO(G                               01403  61000 01453  CHAR = OIGIT
   .     C1432 FX2           COM  MASK•12•ANOT                        01404  43500 00012  COMPARE CHAR TO AN E
   .     C1433               JP   FXE                                 01405  61000 01520  CHAR = E
   .     C1434               COM  MASK•41•ANOT                        01406  43500 00041  COMPARE CHAR TO -
   .     C1435               JP   FXS(GN                              01407  61000 01536  CHAR = -
   .     C1436               COM  MASK•42•ANOT                        01410  43500 00042  COMPARE CHAR TO +
   .     C1437               JP   FXS(GN                              01411  61000 01536  CHAR=+
   .     C1440 FXB4STCR      ENT  B4•NIL                              01412  12400 00000
   .     C1441 FXB5STOR      ENT  B5•NIL                              01413  12500 00000
   .     C1442               EXIT                                     01414  61010 01341
   .     C1443 FXERR         EQUALS     FXB4STOR
   .     C1444 FXCR          ENT  A•B5                                01415  11005 00000  IS OIGIT CNI = 10
   .     C1445               SUB  A•12•ANOT                           01416  21500 00012
   .     C1446               JP   FXERR                               01417  61000 01412  YES= ERROR
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CARDS	LI ID	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C1447	FXCR1	ENT	A•W(IOFRACTION+B7)•ANOT	01420	11537 04615	
.	C145C		JP	FXCR2	01421	61000 01425	
.	C1451		JP	FXCR2•ANEG	01422	60700 01425	
.	C1452	FXCR3	LSH	A•6•ANEG	01423	06700 0C0C6	
.	C1453		JP	FXCR3	01424	61000 01423	
.	C1454	FXCR2	STR	A•W(IOFRACTION+B7)	01425	15037 04615	
.	C1455		BSK	B7•1	01426	71700 0C0C1	
.	C1456		JP	FXCR1	01427	61000 01420	
.	C1457	FXCR4	ENT	A•W(SIXTIES)	01430	11030 01557	
.	C1460		RSE	SET•W(IOINTEGER)	01431	54030 04613	
.	C1461		ENT	A•W(SIXTIES)	01432	11030 01557	
.	C1462		RSE	SET•W(IOINTEGER+1)	01433	54030 04614	
.	C1463	FXCRF7	ENT	A•W(SIXTIES)	01434	11030 01557	
.	C1464		RSE	SET•W(IOFRACTION)	01435	54030 04615	
.	C1465		ENT	A•W(SIXTIES)	01436	11030 01557	
.	C1466		RSE	SET•W(IOFRACTION+1)	01437	54030 04616	
.	C1467		RPL	Y+1•L(FXPREPEN)	01440	36010 01341	NORMAL EXIT
.	C1470		STR	B6•W(NOINTS)	01441	16630 04610	
.	C1471		JP	FXB4STOR	01442	61000 01412	
.	C1472	FXPER	JP	FXPER1	01443	61000 01445	PERIOD SW E
.	C1473		JP	FXERR	01444	61000 01412	SW E
.	C1474	FXPER1	JP	FXPER2	01445	61000 01447	SW D
.	C1475		JP	FXERR	01446	61000 01412	
.	C1476	FXPER2	ENT	Q•12000	01447	10000 12000	
.	C1477		STR	Q•U(FXPER1)	01450	14020 01445	
.	C15C0		STR	Q•U(FXDIGF)	01451	14020 01471	
.	C15C1		JP	FX1	01452	61000 01366	
.	C15C2	FXDIG	ENT	Q•A	01453	10070 000C0	SHIFTS OIGITS TO Q
.	C15C3	FXDIG1	JP	FXDIG2	01454	61000 01457	
.	C15C4		BJP	B5•FXDIGF	01455	72500 01471	IF OIGIT CNT FOR GREATER THAN 10
.	C15C5		JP	FXERR	01456	61000 01412	IF EXCEEOS AN ERROR
.	C15C6	FXDIG2	LSH	Q•24D	01457	05000 0C030	
.	C15C7		ENT	A•W(IOEXPONENT)•APOS	01460	11630 04617	
.	C1510		JP	FXERR	01461	61000 01412	EXPONENT FREATER THAN 5 OIGITS ERR
.	C1511		LSH	AQ•6	01462	07000 00006	
.	C1512		STR	A•W(IOEXPONENT)	01463	15030 04617	
.	C1513		ENT	A•60	01464	I1000 00060	
.	C1514		RSE	SET•W(IOEXPONENT)	01465	54030 04617	
.	C1515		COM	A•6561•YLESS	01466	U4600 06561	EQUAL TO A LESS THAN 40
.	C1516		JP	FX1	01467	61000 01366	YES
.	C1517		JP	FXERR	01470	61000 01412	NO
.	C1520	FXDIGF	JP	FXDIGI	01471	61000 015C4	SET
.	C1521		LSH	Q•24D	01472	05000 00030	DIGIT IN LEFT OF Q
.	C1522		ENT	A•W(IOFRACTION)•APOS	01473	11630 04615	DIGIT SI FRACTION
.	C1523		JP	FXDIGF1	01474	61000 015C0	5 OIGITS YES
.	C1524		LSH	AQ•6	01475	07000 00006	NO
.	C1525		STR	A•W(IOFRACTION)	01476	15030 04615	
.	C1526		JP	FX1	01477	61000 01366	
.	C1527	FXDIGF1	ENT	A•W(IOFRACTION+1)	01500	11030 04616	
.	C1530		LSH	AQ•6	01501	07000 00006	STORAGE RIGHT ORIENTEO
.	C1531		STR	A•W(IOFRACTION+1)	01502	15030 04616	

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                    ........................  SPURT OUTPUT NO. 210  ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    LI IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C1532                JP   FX1                                01503  61000 01366
   .     C1533 FXDIG1         ENT  B6•1+B6                            01504  12606 00001  DIGIT AN INTEGER
   .     C1534                LSH  Q•240                              01505  05000 00030  DIGIT IN LEFT OF Q
   .     C1535                STR  Q•W(QSTORE)                        01506  14030 04565
   .     C1536                ENT  A•W(IOINTEGER)                     01507  11030 04613
   .     C1537                ENT  Q•W(IOINTEGER+1)                   01510  10030 04614
   .     C1540                LSH  AQ•6                               01511  07000 000C6
   .     C1541                STR  A•W(IOINTEGER)                     01512  15030 04613
   .     C1542                ENT  A•W(QSTORE)                        01513  11030 04565
   .     C1543                RSH  Q•6                                01514  01000 00006  RIGHT ORIENT THE INTEGER
   .     C1544                LSH  AQ•6                               01515  07000 00006
   .     C1545                STR  Q•W(IOINTEGER+1)                   01516  14030 04614
   .     C1546                JP   FX1                                01517  61000 01366
   .     C1547 FXE            ENT  Q•12000                            01520  10000 12000  SET O TO B
   .     C1550                STR  Q•U(FXPER1)                        01521  14020 01445
   .     C1551 FXE2           JP   FXE1                               01522  61000 01524
   .     C1552                JP   FXERR                              01523  61000 01412
   .     C1553 FXE1           ENT  Q•12000                            01524  10000 12000  SET E SWITCHES TO B
   .     C1554                STR  Q•U(FXPER)                         01525  14020 01443
   .     C1555                STR  Q•U(FXE2)                          01526  14020 01522
   .     C1556                STR  Q•U(FXSIGN1)                       01527  14020 01540
   .     C1557                ENT  Q•61000                            01530  10000 610C0
   .     C1560                STR  Q•U(FXDIG1)                        01531  14020 01454
   .     C1561                ENT  A•B5                               01532  11005 000C0  TEST DIG CNT = 0
   .     C1562                SUB  A•12•AZERU                         01533  21400 00012
   .     C1563                JP   FX1                                01534  61000 01366  NO
   .     C1564                JP   FXERR                              01535  61000 01412  YES
   .     C1565 FXSIGN         JP   FXSIGN1                            01536  61000 01540  SW ALPHA
   .     C1566                JP   FXERR                              01537  61000 01412
   .     C1567 FXSIGN1        JP   FXSIGN2                            01540  61000 01547  SW E 3PRIME
   .     C1570                COM  MASK•42•ANOT                       01541  43500 00042  TEST FOR +
   .     C1571                CL   A•                                 01542  11000 0C0C0  YES
   .     C1572                STR  A•W(EXPSIGN)                       01543  15030 04620
   .     C1573                ENT  Q•12000                            01544  10000 120C0  SET ALPHA TO B
   .     C1574                STR  Q•U(FXSIGN)                        01545  14U2C 01536
   .     C1575                JP   FX1                                01546  61000 01366
   .     C1576 FXSIGN2        JP   FXSIGN3                            01547  61000 01551
   .     C1577                JP   FXERR                              01550  61000 01412
   .     C16C0 FXSIGN3        COM  MASK•42•ANOT                       01551  43500 00042  TEST FOR +
   .     C16C1                CL   A•                                 01552  11000 0C0C0  YES
   .     C16C2                STR  A•W(SIGN)                          01553  1503U 04607  NO
   .     C16C3                ENT  Q•12000                            01554  10000 120C0
   .     C16C4                STR  Q•U(FXSIGN2)                       01555  14020 01547
   .     C16C5                JP   FX1                                01556  61000 01366
   .     C16C6 SIXTIES        60606      0606U                        01557  60606 06060
   .     C16C7 NUMSTR         ENTRY                                   01560  61000 00000
   .     C1610                ENT  B7•L(NUMSTR)                       01561  12710 01560
   .     C1611                ENT  B7•L(B7)                           01562  12717 000C0  LOAD B7 WITH STORAGE LOCATION

   .     C1612                RPL  Y+1•L(NUMSTR)                      01563  36010 01560  ADJUST EXIT LUCATION
   .     C1613                ENT  A•W(INTEGER)                       01564  11030 04605  STURE CONVERTED NUMBER
   .     C1614                STR  A•W(B7)                            01565  15037 000C0  INTO DESIRED LOCATION
   .     C1615                EXIT                                    01566  61010 01560
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CARDS    L1 ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C1616 STRING         ENTRY                             01567  61000 00000
   .     C1617                ENT  B7•L(STRING)                 01570  12710 01567
   .     C1620                ENT  B7•L(B7)                     01571  12717 00000  LOAD B7 WITH STORAGE LOCATION

   .     C1621                RPL  Y+1•L(STRING)                01572  36010 01567  ADJUST EXIT LOCATION
   .     C1622                STR  B5•L(STRB5STOR)              01573  16510 01615  SAVE B5
   .     C1623                CL   B6•                          01574  12600 00000
   .     C1624 STRINGC1       ENT  A•W(SPACES)                  01575  11030 03077
   .     C1625                ENT  B5•4                         01576  12500 00004
   .     C1626 STRINGC2       ENT  Q•W(BUFFER+B6)               01577  10036 04743  BRING NEXT CHAR FROM BUFFER
   .     C1627                LSH  Q•240                        01600  05000 00030
   .     C1630                LSH  AQ•6                         01601  07000 00006  PACK IT INTO A
   .     C1631                BJP  B5•STRINGO4                  01602  72500 01607
   .     C1632 STRINGC3       STR  A•W(B7)                      01603  15037 00000  WHEN A FILLLO, STORE INTO STOR
                                                                                    AGE
   .     C1633                BSK  B7•70707                     01604  71700 70707  LOCATION, THEN BUMP LOC BY 1
   .     C1634                ENT  A•W(SPACES)                  01605  11030 03077
   .     C1635                ENT  B5•4                         01606  12500 00004
   .     C1636 STRINGO4       BSK  B6•W(BUFSLOT)                01607  71630 04575
   .     C1637                JP   STRINGO2                     01610  61000 01577
   .     C1640                ENT  Q•W(SPACES)                  01611  10030 03077
   .     C1641 STRINGC5       LSH  AQ•6                         01612  07000 00006
   .     C1642                BJP  B5•STRINGO5                  01613  72500 01612
   .     C1643                STR  A•W(B7)                      01614  15037 00000
   .     C1644 STRB5STOR      ENT  B5•NIL                       01615  12500 00000
   .     C1645                EXIT                              01616  61010 01567
   .     C1646 FLTSTR         ENTRY                             01617  61000 00000
   .     C1647                ENT  B7•L(FLTSTR)                 01620  12710 01617
   .     C1650                ENT  B7•L(B7)                     01621  12717 00000  LOAD B7 WITH STORAGE LOCATION

   .     C1651                RPL  Y+1•L(FLTSTR)                01622  36010 01617  ADJUST EXIT LOCATION
   .     C1652                ENT  A•W(EXPONENT)                01623  11030 04611
   .     C1653                STR  A•W(B7)                      01624  15037 00000  STORE 1ST OF 2 FLT PT WORDS
   .     C1654                ENT  A•W(FPFRACTION)              01625  11030 04612
   .     C1655                STR  A•W(1+B7)                    01626  15037 00001  STORE 2ND FLT PT WORD
   .     C1656                EXIT                              01627  61010 01617
   .     C1657 NOLMT          ENTRY                             01630  61000 00000
   .     C1660                RPL  Y+1•L(NOLMT)                 01631  36010 01630
   .     C1661                ENT  A•SPECERR                    01632  11000 00000
   .     C1662                EXIT                              01633  61010 01630
   .     C1663 OECLMT         ENTRY                             01634  61000 00000
   .     C1664                ENT  B7•L(IOECLMT)                01635  12710 01634
   .     C1665                RPL  Y+1•L(IOECLMT)               01636  36010 01634
   .     C1666                RJP  NUMLMT                       01637  65000 01733
   .     C1667                JP   OECLO1                       01640  61000 01643
   .     C1670                RPL  Y+1•L(IOECLMT)               01641  36010 01634
   .     C1671                EXIT                              01642  61010 01634
   .     C1672 OECLO1         STR  A•L(IOECLO2)                 01643  15010 01651
   .     C1673                STR  Q•W(IINTEGER)                01644  14030 04605
   .     C1674                RJP  BINOECINT                    01645  65000 02514
   .     C1675                RJP  SUPZRO                       01646  65000 02726
   .     C1676                U-TAG     IOINTEGER•2             01647  04613 00002
   .     C1677                RJP  LMTSTR1                      01650  65000 02030
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/1/65

CARDS    L1 ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C17CC DECLC2        ENT  A•NIL                               01651  11000 00CC0
   .     C1701               EXIT                                     01652  61010 01634
   .     C17C2 HCCTLMT       ENTRY                                    01653  61000 00000
   .     C17C3               ENT  B7•L(HOCTLMT)                       01654  12710 01653
   .     C17C4               RPL  Y+1•L(HOCTLMT)                      01655  36010 01653
   .     C17C5               RJP  NUMLMT                              01656  65000 01733
   .     C17C6               JP   HOCTLO1                             01657  61000 01662
   .     C17C7               RPL  Y+1•L(HOCTLMT)                      01660  36010 01653
   .     C1710               EXIT                                     01661  61010 01653
   .     C1711 HCCTLC1       STR  A•L(HOCTLO2)                        01662  15010 01666
   .     C1712               STR  Q•W(INTEGER)                        01663  14030 04605
   .     C1713               RJP  BINOCTFLO                           01664  65000 02573
   .     C1714               RJP  LMTSTR1                             01665  65000 02030
   .     C1715 HCCTLC2       ENT  A•NIL                               01666  11000 00000
   .     C1716               EXIT                                     01667  61010 01653
   .     C1717 FIXLMT        ENTRY                                    01670  61000 00000
   .     C1720               ENT  B7•L(FIXLMT)                        01671  12710 01670
   .     C1721               RPL  Y+1•L(FIXLMT)                       01672  36010 01670
   .     C1722               RJP  NUMLMT                              01673  65000 01733
   .     C1723               JP   FIXLO1                              01674  61000 01677
   .     C1724               RPL  Y+1•L(FIXLMT)                       01675  36010 01670
   .     C1725               EXIT                                     01676  61010 01670
   .     C1726 FIXLC1        STR  A•L(FIXLO2)                         01677  15010 01710
   .     C1727               STR  Q•W(INTEGER)                        01700  14030 04605
   .     C1730               PUT  L(FIXIN1)•L(FIXLO15)                01701  10010 01335  MOVE GAMMA TO CALLING SEQUENCE
                                                                      01702  14010 01706
   .     C1731               PUT  90•W(BETA)                          01703  10000 00011
                                                                      01704  14030 04604
   .     C1732               RJP  COFFIX                              01705  65000 03240
   .     C1733 FIXLC15       U-TAG      INTEGER•NIL                   01706  04605 00000
   .     C1734               RJP  LMTSTR2                             01707  65000 02044
   .     C1735 FIXLC2        ENT  A•NIL                               01710  11000 00000
   .     C1736               EXIT                                     01711  61010 01670
   .     C1737 FLTLMT        ENTRY                                    01712  61000 00000
   .     C1740               ENT  B7•L(FLTLMT)                        01713  12710 01712
   .     C1741               RPL  Y+1•L(FLTLMT)                       01714  36010 01712
   .     C1742               RJP  FLTNUMLMT                           01715  65000 01751
   .     C1743               JP   FLTLO1                              01716  61000 01721
   .     C1744               RPL  Y+1•L(FLTLMT)                       01717  36010 01712
   .     C1745               EXIT                                     01720  61010 01712
   .     C1746 FLTLC1        STR  A•L(FLTLO2)                         01721  15010 01731
   .     C1747               STR  Q•U(FLTO3)                          01722  14020 01726
   .     C1750               PUT  90•W(BETA)                          01723  10000 00011
                                                                      01724  14030 04604
   .     C1751               RJP  COTFLT                              01725  65000 03441
   .     C1752 FLTO3         C    0                                   01726  00000 00000
   .     C1753               JP   FLTLO2+1                            01727  61000 01732
   .     C1754               RJP  LMTSTR3                             01730  65000 02057
   .     C1755 FLTLC2        ENT  A•NIL                               01731  11000 00000
   .     C1756               EXIT                                     01732  61010 01712
   .     C1757 NLMLMT        ENTRY                                    01733  61000 00000
   .     C1760               ENT  B7•L(B7)                            01734  12717 00000
   .     C1761               ENT  Q•W(B7)                             01735  10037 00000
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CAROS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C1762            SUB  Q•1                              01736  27000 0C0C1
   .     C1763            COM  Q•W(INTEGER)•YLESS               01737  04230 046C5
   .     C1764            JP   NUMLMT01                         01740  61000 01744
   .     C1765            ADD  Q•1                              01741  26000 000C1
   .     C1766            ENT  A•21                             01742  11000 0C021  MIN LIMIT CODE
   .     C1767            EXIT                                  01743  61010 01733
   .     C1770 NUMLMTC1   ENT  Q•W(1+B7)                        01744  10037 0C0C1
   .     C1771            COM  Q•W(INTEGER)•YLESS               01745  04230 046C5
   .     C1772            ENT  A•20•SKIP                        01746  11100 0C020  MAX LIMIT CODE
   .     C1773            RPL  Y+1•L(NUMLMT)                    01747  36010 01733
   .     C1774            EXIT                                  01750  61010 01733
   .     C1775 FLTNUMLMT  ENTRY                                 01751  61000 00CC0
   .     C1776            ENT  Q•X(77777)                       01752  10040 77777
   .     C1777            ENT  B7•L(B7)                         01753  12717 00CC0  LOC OF FIRST LIMIT WORD TO B7

   .     C2CC0            ENT  A•W(1+B7)•APOS                   01754  11637 0CCC1  TEST SIGN OF LOWER LIMIT
   .     C2CC1            JP   FLTLOLMT2                        01755  61000 01777  NEG
   .     C2CC2            ENT  A•W(FPFRACTION)•APOS             01756  11630 04612  POS - TEST SIGN OF FRAC
   .     C2CC3            JP   FLTNUMEL                         01757  61000 02023  NEG - LOWER LIMIT ERROR
   .     C2CC4 FLTLCLMT1  ENT  A•W(B7)                          01760  11037 000C0  POS - IS EXP GRTR THAN LLEXP
   .     C2CC5            COM  A•W(EXPONENT)•YLESS              01761  04630 04611
   .     C2CC6            JP   FLTUPLMT                         01762  61000 020C1  YES - NUMBER IS GOOD
   .     C2CC7            COM  MASK•W(EXPONENT)•AZERO           01763  43430 04611  NO - IS IT EQUAL
   .     C2C10            JP   FLTNUMEL                         01764  61000 02023  NO - LOWER LIMIT ERROR
   .     C2C11            ENT  A•W(FPFRACTION)                  01765  11030 04612  YES - IS FRAC LESS THAN LLFRAC

   .     C2C12            COM  A•W(1+B7)•YLESS                  01766  04637 00001
   .     C2C13            JP   FLTNUMEL                         01767  61000 02023  YES - LOWER LIMIT ERROR
   .     C2C14            JP   FLTUPLMT                         01770  61000 020C1  NO - GOOD NUMBER
   .     C2C15 FLTLCLMT3  ENT  A•W(B7)                          01771  11037 000C0  IF BOTH NEG
   .     C2C16            COM  A•W(EXPONENT)•YLESS              01772  04630 04611
   .     C2C17            JP   FLTNUMEL                         01773  61000 02023
   .     C2C20            COM  MASK•W(EXPONENT)•AZERO           01774  43430 04611
   .     C2C21            JP   FLTUPLMT                         01775  61000 020C1
   .     C2C22            JP   FLTLOLMT1+5                      01776  61000 01765
   .     C2C23 FLTLCLMT2  ENT  A•W(FPFRACTION)•APOS             01777  11630 04612  IF LL IS NEG TEST SIGN OF
   .     C2C24            JP   FLTLOLMT3                        02000  61000 01771
   .     C2C25 FLTUPLM1   ENT  A•W(3+B7)•APOS                   02001  11637 000C3  TEST SIGN OF UPPER LIMIT
   .     C2C26            JP   FLTUP2                           02002  61000 02016  NEG
   .     C2027            ENT  A•W(FPFRACTION)•APOS             02003  11630 04612  POS - TEST SIGN OF FRAC
   .     C2030            JP   FLTNUMGX                         02004  61000 02026  NEG - GOOD NUMBER
   .     C2031 FLTUP1     ENT  A•W(2+B7)                        02005  11037 000C2  POS - IS EXP GRTR THAN ULEXP
   .     C2C32            COM  A•W(EXPONENT)•YLESS              02006  04630 04611
   .     C2C33            JP   FLTNUMEU                         02007  61000 02020  YES - UPPER LIMIT ERROR
   .     C2C34            COM  MASK•W(EXPONENT)•AZERO           02010  43430 04611  NO - IS IT EQUAL
   .     C2C35            JP   FLTNUMGX                         02011  61000 02026  NO - THEREFORE LESS AND GOOD

   .     C2C36            ENT  A•W(3+B7)                        02012  11037 0C0C3  YES - TEST FRACTIONS
   .     C2C37            COM  A•W(FPFRACTION)•YLESS            02013  04630 04612
   .     C2C40            JP   FLTNUMEU                         02014  61000 02020  IF FRAC GRTR THAN UL FRAC - ER
                                                                                     ROR
   .     C2C41            JP   FLTNUMGX                         02015  61000 02026  OTHERWISE - GOOD NUMBER
   .     C2C42 FLTUP2     ENT  A•W(FPFRACTION)•APOS             02016  11630 04612  IF UL IS NEG, TEST SIGN OF FRA
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    LI IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

                                                                                          C
    .    C2C43                JP   FLTUP1                             02017  61000 02005  IF NEG, TESI IS SAME
    .    C2C44 FLTNUMFU       ENT  A•20                               02020  11000 00020  UPPER LIMIT EXCEEDED CODE 20 T
                                                                                          O A REG
    .    C2C45                ENI  C•2+B7                             02021  10007 00002
    .    C2C46                EXIT                                    02022  61010 01751  ERROR EXIT
    .    C2C47 FLTNUMFL       ENT  A•21                               02023  11000 00021  LOWER LIMIT NOT MET CODE 21 TO
                                                                                           A REG
    .    C2C50                ENT  C•B7                               02024  10007 00000
    .    C2C51                EXIT                                    02025  61010 01751  ERROR EXIT
    .    C2C52 FLTNUMGX       RPL  Y+1•LIFLTNUMLMTI                   02026  36010 01751  GOOD EXIT
    .    C2C53                EXIT                                    02027  61010 01751
    .    C2C54 LMTSTR1        ENTRY                                   02030  61000 00000
    .    C2C55                CLEAR     8D•LIMIT                      02031  70100 00010
                                                                      02032  16030 04104
    .    C2C56                ENT  A•W(SIGNI•ANOT                     02033  11530 04607
    .    C2C57                ENT  A•0•SKIP                           02034  11100 00000
    .    C2C60                ENT  A•41                               02035  11000 00041
    .    C2C61                STR  A•WILIMITI                         02036  15030 04104
    .    C2C62                PUT  WIIOINTEGERI•WILIMIT+1I            02037  10030 04613
                                                                      02040  14030 04105
    .    C2C63                PUT  WIIOINTEGER+1I•WILIMIT+2I          02041  10030 04614
                                                                      02042  14030 04106
    .    C2C64                EXII                                    02043  61010 02030
    .    C2C65 LMTSTR2        ENTRY                                   02044  61000 00000
    .    C2C66                RJP  LMTSTR1                            02045  65000 02030
    .    C2C67                ENT  A•WIBETA)•ANOT                     02046  11530 04604
    .    C2C70                EXIT                                    02047  61010 02044
    .    C2C71                PUT  75•WILIMIT+3I                      02050  10000 00075
                                                                      02051  14030 04107
    .    C2C72                PUT  WIIOFRACTION)•W(LIMIT+4)           02052  10030 04615
                                                                      02053  14030 04110
    .    C2C73                PUT  WIIOFRACTION+1I•WILIMIT+5I         02054  10030 04616
                                                                      02055  14030 04111
    .    C2C74                EXIT                                    02056  61010 02044
    .    C2C75 LMTSTR3        ENTRY                                   02057  61000 00000
    .    C2C76                RJP  LMTSTR2                            02060  65000 02044
    .    C2C77                ENT  A•LIIOEXPONENTI•ANOT               02061  11510 04617
    .    C2100                EXIT                                    02062  61010 02057
    .    C2101                ENT  A•W(EXPSIGNI•ANOT                  02063  11530 04620
    .    C2102                ENT  A•51242•SKIP                       02064  11100 51242
    .    C2103                ENT  A•51241                            02065  11000 51241
    .    C2104                STR  A•WILIMIT+6I                       02066  15030 04112
    .    C2105                PUT  L(IOEXPONENT)•WILIMIT+7)           02067  10010 04617
                                                                      02070  14030 04113
    .    C2106                EXIT                                    02071  61010 02057
    .    C2107 SPACE          EQUALS    05
    .    C2110 MINUS          EQUALS    41
    .    C2111 PLUS           EQUALS    42
    .    C2112 PLTFORMINT     ENTRY                                   02072  61000 00000
    .    C2113                ENT  B7•LIPUTFORMINTI                   02073  12710 02072
    .    C2114                RPL  Y+1•LIPUTFORMINTI                  02074  36010 02072
    .    C2115 PLTO1          ENT  A•WIB7)                            02075  11037 00000  GET LOCATION OF OUT SPEC TABLE
```

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C2116			STR	A•L(PUTO2)	02076	15010	02101		
.	C2117			ADD	A•1	02077	20000	00001		
.	C2120			STR	A•L(PUTO4)	02100	15010	02122		
.	C2121		PUTO2	ENT	Q•W(00000)	02101	10030	00000		GET FORMAT ENTRY WORD
.	C2122			CL	A•	02102	11000	00000		
.	C2123			LSH	AQ•6	02103	07000	00006		ISOLATE FORMAT CODE
.	C2124			STR	Q•W(PUTS1)	02104	14030	04563		
.	C2125			ENT	Q•77	02105	10000	00077		
.	C2126			ENT	B7•PUTCODMAX	02106	12700	00004		
.	C2127		PUTO25	COM	MASK•L(PUTCODTBL+B7)•ANOT	02107	43517	02176		SEARCH FOR CODE
.	C2130			JP	PUTO3	02110	61000	02114		
.	C2131			BJP	B7•PUTO25	02111	72700	02107		
.	C2132		PUTERRX	ENT	A•SPECERR	02112	11000	00000		IF CODE NOT FOUND
.	C2133			EXIT		02113	61010	02072		ERROR EXIT
.	C2134		PUTO3	ENT	A•U(PUTCODTBL+B7)	02114	11027	02176		
.	C2135			STR	A•L(PUTO5)	02115	15010	02126		
.	C2136			COM	A•C2000•YLESS	02116	04600	02000		
.	C2137			JP	PUTO8	02117	61000	02164		
.	C2140			COM	A•03000•YLESS	02120	04600	03000		
.	C2141			JP	PUTO7	02121	61000	02145		
.	C2142		PUTO4	ENT	A•W(00000)	02122	11030	00000		GET NEXT WORD FROM FORMAT STRING
.	C2143			STR	A•U(PUTO5I	02123	15020	02126		STORE LOC OF OUTPUT IN CALLING SEQ
.	C2144			STR	A•W(PUTS2)	02124	15030	04564		STORE POSSIBLE LOC OF NEXT OUTPUT SPEC
.	C2145			RJP	PUTPREP	02125	65000	02235		
.	C2146		PUTO5	C	0	02126	00000	00000		
.	C2147			JP	PUTERRX	02127	61000	02112		ERROR RETURN
.	C2150			ENT	A•U(PUTS2)	02130	11020	04564		POSSIBLE LOC OF NEXT OUT SPEC
.	C2151			RSH	AQ•1•AZERO	02131	03400	00001		
.	C2152			JP	PUTO6	02132	61000	02136		
.	C2153			ENT	A•L(PUTO2)	02133	11010	02101		
.	C2154			ADD	A•2	02134	20000	00002		
.	C2155			JP	PUTO1+1	02135	61000	02076		
.	C2156		PUTO6	ENT	A•77776	02136	11000	77776		
.	C2157			ENT	Q•77776	02137	10000	77776		
.	C2160			COM	MASK•U(PUTS2I•AZERO	02140	43420	04564		
.	C2161			ENT	A•U(PUTS2)•SKIP	02141	11120	04564		
.	C2162			RPL	Y+1•L(PUTFORMINT)•SKIP	02142	36110	02072		
.	C2163			JP	PUTO1+1	02143	61000	02076		
.	C2164			EXIT		02144	61010	02072		
.	C2165		PUTO7	ENT	Q•W(PUTS1)	02145	10030	04563		
.	C2166			ENT	A•W(CHARDI	02146	11030	02175		
.	C2167			COM	MASK•W(M6L)•ANOT	02147	43530	03074		
.	C2170			JP	PUTO71	02150	61000	02155		
.	C2171			LSH	AQ•2	02151	07000	00002		
.	C2172			CL	A•	02152	11000	00000		
.	C2173			LSH	AQ•4	02153	07000	00004		BETA
.	C2174			RSE	SET•L(PUTO5I	02154	54010	02126		
.	C2175		PUTO71	LSH	AQ•6	02155	07000	00006		
.	C2176			RJP	GREEKCONV	02156	65000	02203		CONVERT GAMMA TO BINARY

CARDS	LI IO LABEL	TA STATEMENT	LOC	F JKB Y	NOTES
.	C2177	JP PUTERRX	02157	61000 02112	
.	C22C0	ENT A•W(INTEGER)	02160	11030 046C5	
.	C22C1	LSH A•4	02161	06000 0C0C4	
.	C22C2	RSE SET•W(PUTOS)	02162	54030 02126	GAMMA TO CALLING SEQUENCE
.	C22C3	JP PUT04	02163	61000 02122	
.	C22C4 PLTC8	ENT Q•W(PUTS1)	02164	10030 04563	IF FLOATING POINT,
.	C22C5	ENT A•W(CHARO)	02165	11030 02175	
.	C22C6	COM MASK•W(M6L)•ANOT	02166	43530 03074	
.	C22C7	JP PUT04	02167	61000 02122	
.	C2210	LSH AQ•2	02170	07000 000C2	
.	C2211	CL A•	02171	11000 000C0	
.	C2212	LSH AQ•4	02172	07000 0C0C4	
.	C2213	RSE SET•L(PUTOS)	02173	54010 02126	
.	C2214	JP PUT04	02174	61000 02122	
.	C2215 CHARC	240CC 00000	02175	24000 000C0	
.	C2216 PLTCCCMAX	EQUALS 4			
.	C2217 PUTCCCTBL	C100C 13	02176	01000 00013	
.	C222C	C200C 35	02177	02000 0C035	
.	C2221	C300C 11	02200	03000 00011	
.	C2222	C400C 24	02201	04000 00024	
.	C2223	C50CC 06	02202	05000 000C6	
.	C2224 PLTLM	EQUALS 12			
.	C2225 GREEKCONV	ENTRY	02203	61000 000C0	
.	C2226	CL A•	02204	11000 000C0	
.	C2227	LSH AQ•14	02205	0700C 0C014	
.	C223C	SEL CP•6060	02206	51000 06060	
.	C2231	RSH AQ•6	02207	03000 000C6	
.	C2232	COM A•PUTLM•YLESS	02210	04600 00012	TEST 1ST DIGIT
.	C2233	JP $+3	02211	61000 02214	IF LESS THAN 11, GOOD
.	C2234	SEL CP•44•AZERO	02212	51400 00044	IF GREATER THAN 11, TEST FOR 2 4
.	C2235	EXIT	02213	61010 022C3	IF NOT, ERROR
.	C2236	STR A•W(IOINTEGER+1)	02214	15030 04614	
.	C2237	CL A•	02215	11000 000C0	
.	C2240	LSH AQ•6	02216	07000 000C6	
.	C2241	COM A•PUTLM•YLESS	02217	04600 0C012	TEST NEXT DIGIT
.	C2242	JP $+3	02220	61000 02223	
.	C2243	SEL CP•44•AZERO	02221	51400 00044	
.	C2244	JP GREO1	02222	61000 02227	
.	C2245	RSH AQ•6	02223	03000 000C6	
.	C2246	ENT A•W(IOINTEGER+1)	02224	11030 04614	
.	C2247	LSH AQ•6	02225	07000 000C6	
.	C2250	STR A•W(IOINTEGER+1)	02226	15030 04614	
.	C2251 GREO1	CL W(IOINTEGER)	02227	16030 04613	
.	C2252	CL W(SIGN)	02230	16030 046C7	
.	C2253	RJP INTBCOBIN	02231	65000 02607	
.	C2254	EXIT	02232	61010 022C3	
.	C2255	RPL Y+1•L(GREEKCONV)	02233	36010 022C3	
.	C2256	EXIT	02234	61010 022C3	
.	C2257 PLTPREP	ENTRY	02235	61000 000C0	
.	C2260	STR B4•L(PPB4STOR)	02236	16410 025C2	
.	C2261	STR B5•L(PPB5STOR)	02237	16510 025C3	
.	C2262	STR B6•L(PPB6STOR)	02240	16610 025C4	

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CAROS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C2263            ENT  B5•L(PUTPREP)                    02241  12510 02235
   .     C2264            ENT  A•U(B5)                          02242  11025 00000  SEPERATE RETRIEVAL ADDRESS
   .     C2265            STR  A•W(PPADDR)                      02243  15030 04601  AND STORE
   .     C2266            ENT  Q•L(B5)                          02244  10015 00000
   .     C2267            CL   A•                               02245  11000 00000
   .     C2270            LSH  AQ•21D                           02246  07000 00025  SEPERATE CODE GAMMA AND BETA

   .     C2271            STR  A•W(CODE)                        02247  15030 04602  AND STORE EACH
   .     C2272            CL   A•                               02250  11000 00000
   .     C2273            LSH  AQ•5                             02251  07000 00005
   .     C2274            STR  A•W(GAMMA)                       02252  15030 04603
   .     C2275            LSH  Q•4                              02253  05000 00004
   .     C2276            STR  Q•W(BETA)                        02254  14030 04604
   .     C2277            ENT  B6•L(BUFFCOUNT)                  02255  12610 04600  PUT BUFFCOUNT INTO BUFFER IR
   .     C23C0            ENT  A•W(CODE)                        02256  11030 04602  ENTER CODE AND JUMP
   .     C23C1            SUB  A•1•ANOT                         02257  21500 00001  TO APPROPRAITE OUTPUT FORMAT
   .     C23C2            JP   PPA                              02260  61000 02273  ROUTINE 01-PPA 02-PPB
   .     C23C3            SUB  A•1•ANOT                         02261  21500 00001  03- PPC  04-PPD  05-PPE
   .     C23C4            JP   PPB                              02262  61000 02352
   .     C23C5            SUB  A•1•ANOT                         02263  21500 00001
   .     C23C6            JP   PPC                              02264  61000 02407
   .     C23C7            SUB  A•1•ANOT                         02265  21500 00001
   .     C2310            JP   PPD                              02266  61000 02436
   .     C2311            SUB  A•1•ANOT                         02267  21500 00001
   .     C2312            JP   PPE                              02270  61000 02455
   .     C2313            ENT  A•21D                            02271  11000 00025  VALID CODE NOT FOUND PUT ERROR

   .     C2314            JP   PPERREXIT                        02272  61000 02473  CODE 21 IN A-JUMP TO ERROR EXI
                                                                                     T
   .     C2315 PPA        PUT  W(PPADDR)•U(PPAD+1)              02273  10030 04601  F-BETA OUTPUT ROUTINE
                                                                02274  14020 02300
   .     C2316            PUT  W(BETA)•L(PPAD+1)                02275  10030 04604
                                                                02276  14010 02300
   .     C2317 PPAD       RJP  COTFLT                           02277  65000 03441  JUMP TO COTFLT TO CONVERT A 60

   .     C2320            RESERVE   1                           02300  00000 00000  BIT FLT NO. AT ADDRESS IN CALL

   .     C2321            JP   PPERREXIT                        02301  61000 02473
   .     C2322            ENT  A•W(SIGN)•ANOT                   02302  11530 04607  SEQUENCE TO FLO.DATA CODE LEFT
                                                                                      IN
   .     C2323            JP   PPA1                             02303  61000 02306  IOINTER-IOFRACTION-IOEXPONENT

   .     C2324            ENT  A•41                             02304  11000 00041  SIGN AND EXPONENT SIGN
   .     C2325            RJP  BUFFSTORE                        02305  65000 02506
   .     C2326 PPA1       ENT  A•W(IOINTEGER+1)                 02306  11030 04614  STORE SIGN AND IOINTEGER IN BU
                                                                                     FF
   .     C2327            RJP  BUFFSTORE                        02307  65000 02506
   .     C2330            ENT  A•75                             02310  11000 00075  STORE DECIMAL POINT
   .     C2331            RJP  BUFFSTORE                        02311  65000 02506
   .     C2332            ENT  A•W(BETA)•ANOT                   02312  11530 04604
   .     C2333            JP   PPA4                             02313  61000 02330
   .     C2334            CL   B5•                              02314  12500 00000
   .     C2335            CL   B4•                              02315  12400 00000
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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C2336 PPA2          ENT  Q•W(IOFRACTION+B5)            02316  10035 04615  BRING IN PACKED WORD
   .     C2337 PPA3          CL   A•                            02317  11000 000C0
   .     C234C               LSH  AQ•6                          02320  07000 000C6  SEPERATE DIGIT
   .     C2341               RJP  BUFFSTORE                     02321  65000 025C6  STORE
   .     C2342               RPL  Y-1•W(BETA)•ANOT              02322  37530 04604  DECREMENT BETA COUNT
   .     C2343               JP   PPA4                          02323  61000 02330  OUT BETA DIGIT HAVE BEEN STORE
                                                                                    D
   .     C2344               BSK  B4•4                          02324  71400 000C4  INDEX CHARACTER COUNT
   .     C2345               JP   PPA3                          02325  61000 02317  WORD NOT DONE-BACK FOR NEXT DI
                                                                                    GIT
   .     C2346               BSK  B5•1                          02326  71500 00001  WORD DONE,INDEX WORD COUNT
   .     C2347               JP   PPA2                          02327  61000 02316  BACK FOR 2ND WORD
   .     C2350 PPA4          ENT  A•W(IOEXPONENT)•ANOT          02330  11530 04617
   .     C2351               JP   PPFINAL                       02331  61000 02476
   .     C2352               ENT  A•05                          02332  11000 00005
   .     C2353               RJP  BUFFSTORE                     02333  65000 025C6  STORE SPACE CHARACTER
   .     C2354               ENT  A•12                          02334  11000 00012
   .     C2355               RJP  BUFFSTORE                     02335  65000 02506  STORE E CHARACTER
   .     C2356               ENT  A•W(EXPSIGN)•AZERO            02336  11430 04620
   .     C2357               ENT  A•41•SKIP                     02337  11100 00041
   .     C2360               ENT  A•42                          02340  11000 00042
   .     C2361               RJP  BUFFSTORE                     02341  65000 02506
   .     C2362               ENT  Q•W(IOEXPONENT)               02342  10030 04617  SEPERATE AND STORE THE
   .     C2363               CL   A•                            02343  11000 00000  2RIGHT IOEXPONENT DIGITS
   .     C2364               LSH  AQ•240                        02344  07000 00030
   .     C2365               RJP  BUFFSTORE                     02345  65000 02506
   .     C2366               CL   A•                            02346  11000 00000
   .     C2367               LSH  AQ•6                          02347  07000 00006
   .     C2370               RJP  BUFFSTORE                     02350  65000 02506
   .     C2371               JP   PPFINAL                       02351  61000 02476  TO FINALIZE AND EXIT
   .     C2372 PPB           ENT  A•W(PPADDR)                   02352  11030 04601  X-BETA-B-GAMMA OUTPUT ROUTINE

   .     C2373               STR  A•U(PPBD•1)                   02353  15020 02357  SETUP CALLING
   .     C2374               ENT  A•W(GAMMA)                    02354  11030 04603
   .     C2375               STR  A•L(PPBD•1)                   02355  15010 02357
   .     C2376 PPBD          RJP  COFFIX                        02356  65000 03240  JUMP TO CONVERT 30 BIT NO. TO
   .     C2377               RESERVE   1                        02357  00000 00000  FIXED FIELD DATA FORMAT LEFT I
                                                                                    N
   .     C24CC               ENT  A•W(SIGN)•ANOT                02360  11530 046C7  EXAMINE SIGN
   .     C2401               JP   PPB1                          02361  61000 02364  POS-SKIP
   .     C24C2               ENT  A•41                          02362  11000 00041  NEG-STORE MINUS IN BUFFER
   .     C24C3               RJP  BUFFSTORE                     02363  65000 025C6
   .     C24C4 PPB1          CL   B5•                           02364  12500 000C0
   .     C2405               RJP  ZROSUPINT                     02365  65000 02421  PERFORM ZERO SUPPRESSION
   .     C24C6               ENT  A•75                          02366  11000 00075  YES-STORE DECIMAL POINT
   .     C24C7               RJP  BUFFSTORE                     02367  65000 02506
   .     C2410               ENT  A•W(BETA)•ANOT                02370  11530 046C4
   .     C2411               JP   PPB6                          02371  61000 024C6
   .     C2412 PPB3          ENT  B4•BD                         02372  12400 00000  INITIALIZE FOR LOOP TO
   .     C2413               ENT  B5•BD                         02373  12500 00000  STORE FRACTION DIGITS
   .     C2414 PPB4          ENT  Q•W(IOFRACTION+B5)            02374  10035 04615  LOOP TO STORE BETA
   .     C2415 PPB5          CL   A•                            02375  11000 000C0  FRACTIONAL DIGITS
   .     C2416               LSH  AQ•6                          02376  07000 00006
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C2417               RJP  BUFFSTORE                           02377  65000 02506
   .     C2420               RPL  Y-1•W(BETA)•ANOT                    02400  37530 04604
   .     C2421               JP   PPB6                                02401  61000 024C6  OUT-BETA OIG(TS STOREO
   .     C2422               BSK  B4•4                                02402  71400 00004
   .     C2423               JP   PPB5                                02403  61000 02375
   .     C2424               BSK  B5•1                                02404  71500 00001
   .     C2425               JP   PPB4                                02405  61000 02374
   .     C2426 PFB6          JP   PPFINAL                             02406  61000 02476
   .     C2427 PFC           ENT  B4•L(PPAODR)                        02407  12410 04601  O-FORMAT OUTPUT ROUT(NE
   .     C2430               ENT  A•W(B4)                             02410  11034 00000  IN(T(AL(ZE FOR CALL
   .     C2431               STR  A•W(INTEGLR)                        02411  15030 046C5  TO B(NOEC(NT
   .     C2432               RJP  B(NOECINT                           02412  65000 02514  CALL TO CONVERT BINARY NO. TO

   .     C2433               ENT  A•W(SIGN)•ANOT                      02413  11530 046C7  F(ELO OATA OECIMAL INTEGER
   .     C2434               JP   PPCOO                               02414  61000 02417  CHECK S(GN ANO STORE
   .     C2435               ENT  A•41                                02415  11000 00041  OR SK(P
   .     C2436               RJP  BUFFSTORE                           02416  65000 025C6
   .     C2437 PFCOO         RJP  ZROSUP(NT                           02417  65000 02421  SUPPRESS LEAO ZEROS ANO STORE

   .     C2440               JP   PPF(NAL                             02420  61000 02476
   .     C2441 ZRCSUP(NT     ENTRY                                    02421  61000 00000
   .     C2442 PPCO          RJP  SUPZRO                              02422  65000 02726
   .     C2443               U-TAG      IO(NTEGER•2                   02423  04613 00002
   .     C2444               CL   B5•                                 02424  12500 00000
   .     C2445               ENT  Q•W((O(NTEGER+B5)                   02425  10035 04613
   .     C2446 PFC1          CL   A•                                  02426  11000 000C0
   .     C2447               LSH  AQ•6•AZERO                          02427  07400 0C0C6
   .     C2450               RJP  BUFFSTORE                           02430  65000 025C6
   .     C2451               ADO  Q•O•QZERO                           02431  26400 000C0
   .     C2452               JP   PPC1                                02432  61000 02426
   .     C2453               BSK  B5•1                                02433  71500 000C1
   .     C2454               JP   PPC1-1                              02434  61000 02425
   .     C2455               EXIT                                     02435  61010 02421
   .     C2456 PFD           ENT  B4•L(PPAOOR)                        02436  12410 046C1  O-FORMAT ROUTINE
   .     C2457               ENT  A•W(B4)                             02437  11034 000C0  SETUP BINARY WORO TO BE CONVER
                                                                                         TEO
   .     C2460               STR  A•W(INTEGER)                        02440  15030 046C5
   .     C2461               RJP  BINOCTFLO                           02441  65000 02573  CALL BINOCTFLO TO CONVERT BINA
                                                                                         RY
   .     C2462               ENT  B4•BO                               02442  12400 000C0  WROO TO OCTAL FLO. OATA INTEGE
                                                                                         R
   .     C2463               ENT  B5•BO                               02443  12500 0C0C0
   .     C2464 PFD1          ENT  Q•W((O(NTEGER+B5)                   02444  10035 04613  LOOP TO STORE 2 PACKEO
   .     C2465 PPO2          CL   A•                                  02445  11000 00000  FO WOROS IN BUFFER
   .     C2466               LSH  AQ•6                                02446  07000 000D6
   .     C2467               RJP  BUFFSTORE                           02447  65000 025C6
   .     C2470               BSK  B4•4                                02450  71400 00004
   .     C2471               JP   PPO2                                02451  61000 02445
   .     C2472               BSK  B5•1                                02452  71500 00001
   .     C2473               JP   PPO1                                02453  61000 02444
   .     C2474               JP   PPF(NAL                             02454  61000 02476  FIN(SHEO-TO FINAL EXIT
   .     C2475 PFE           ENT  A•L(PPAOOR)                         02455  11010 04601  A-FORMAT ROUTINE
   .     C2476               STR  A•L(PPE1)                           02456  15010 02460  SETUP 1ST WURD AOORESS
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CARDS	LI ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C2477			ENT B4•80	02457	12400	00000		INITIALE LOOP TO UNPACK-PD WORDS
.	C25C0	PPE1		ENT Q•W(11111)	02460	10030	11111		WORD IN
.	C2501			ENT Y-Q•X77777•ANOT	02461	31540	77777		IS IT ALL ONES
.	C2502			JP PPE3	02462	61000	02472		YES-OUT
.	C25C3	PPE2		CL A•	02463	11000	00000		NO-UNPACK AND STORE IN BUFFER
.	C25C4			LSH AQ•6	02464	07000	00006		SEPERATE CHAR.
.	C2505			RJP BUFFSTORE	02465	65000	02506		STORE
.	C2506			BSK B4•4	02466	71400	00004		IS WORD FINISHED
.	C2507			JP PPE2	02467	61000	02463		NO
.	C2510			RPL Y+1•L(PPE1)	02470	36010	02460		YES-MOD. ADDRESS FOR NEXT WORD
.	C2511			JP PPE1	02471	61000	02460		TO UNPACK NEXT WORD
.	C2512	PPE3		JP PPFINAL	02472	61000	02476		FINISHED-TO FINAL EXIT
.	C2513	PFERREXIT		ENT Q•L(PUTPREP)	02473	10010	02235		SETUP ERROR RETURN
.	C2514			ADD Q•1	02474	26000	00001		
.	C2515			JP PPFINAL+2	02475	61000	02500		
.	C2516	PFFINAL		ENT Q•L(PUTPREP)	02476	10010	02235		SETUP NORMAL RETURN
.	C2517			ADD Q•2	02477	26000	00002		
.	C2520			STR Q•L(PUTPREP)	02500	14010	02235		
.	C2521			STR B6•L(BUFFCOUNT)	02501	16610	04600		STORE BUFFER COUNT
.	C2522	PPB4STOR		ENT B4•NIL	02502	12400	00000		
.	C2523	PPB5STOR		ENT B5•NIL	02503	12500	00000		
.	C2524	PPB6STOR		ENT B6•NIL	02504	12600	00000		
.	C2525			JP L(PUTPREP)	02505	61010	02235		
.	C2526	BUFFSTORE		ENTRY	02506	61000	00000		ROUTINE TO STORE CHAR.FROM A
.	C2527			STR A•W(BUFFER+B6)	02507	15036	04743		INTO BUFFER-CHECK BUFF OVERFLOW
.	C2530			BSK B6•BUFLMT	02510	71600	00453		IS BUFFER FULL
.	C2531			EXIT	02511	61010	02506		NO
.	C2532			ENT A•11	02512	11000	00011		YES
.	C2533			JP PPERREXIT	02513	61000	02473		ERROR RETURN
.	C2534	BINDECINT		JP 0	02514	61000	00000		EXIT ENTRY
.	C2535			STR B1•U(BINDECINT3)	02515	16120	02542		SAVE B REGISTERS
.	C2536			STR B2•L(BINDECINT3)	02516	16210	02542		
.	C2537			CL B2	02517	12200	00000		INITIALIZE B REGS FOR COUNT
.	C2540			ENT B1•1	02520	12100	00001		
.	C2541			STR B1•W(SIGN)	02521	16130	04607		STORE 1 (B1) IN SIGN AS NEG SIGN
.	C2542			ENT Q•W(INTEGER)•QNEG	02522	10330	04605		TEST IF NUMBER(TO BE CONV) IS NEG
.	C2543			RPL Y-1•W(SIGN)•SKIP	02523	37130	04607		POS RESET SIGN TO ZERO-GO TO MAIN
.	C2544			CP Q	02524	14000	00000		NEG LEAVE SIGN-COMPLEMENT NUMBER
.	C2545	BINDECINT1		CL W(IOINTEGER+B1)	02525	16031	04613		MAIN LOOP-INITIALLY CLEAR OUTPUT
.	C2546	BINDECINT2		CL A	02526	11000	00000		CLEAR A FOR DIVIDE
.	C2547			DIV 12	02527	23000	00012		NEG DEC DIGIT REMAINS IN A
.	C2550			ADD A•60	02530	20000	00060		INCORPORATE FLDATA BITS
.	C2551			RPT B2	02531	70002	00000		VARIABLE SHIFT TO INCORP FLOATA

CARDS	L1	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C2552			LSH	A•6	02532	06000		00006	DIGIT IN RT. JUSTIFIED OUTPUT
.	C2553			RSE	SET•W(IOINTEGER+B1)	02533	54031		04613	ADD IN NEW 6-BIT CODE
.	C2554			BSK	B2•4	02534	71200		00004	OUTPUT WORD FILLED YET (5 CODE S)
.	C2555			JP	BINDECINT2	02535	61000		02526	NO-GET ANOTHER CODE
.	C2556			BJP	B1•BINDECINT1	02536	72100		02525	YES-OUTPUT COMPLETED-IF NO DO NEXT
.	C2557			ENT	B1•U(BINDECINT3)	02537	12120		02542	YES-RESTORE B REGS
.	C2560			ENT	B2•L(BINDECINT3)	02540	12210		02542	
.	C2561			JP	BINDECINT	02541	61000		02514	AND EXIT
.	C2562		BINDECINT3	C	0	02542	00000		00000	SAVE B REGISTERS HERE
.	C2563		INTOCTBIN	JP	0	02543	61000		00000	EXIT ENTRY
.	C2564			STR	B1•U(INTOCTBIN5)	02544	16120		02572	
.	C2565			CL	B1	02545	12100		00000	INITIALIZE B RES FOR COUNT
.	C2566			CL	B7	02546	12700		00000	
.	C2567		INTOCTBIN1	ENT	Q•W(IOINTEGER+B1)	02547	10031		04613	FIELDATA WORD TO BE TRANSLATED
.	C2570		INTOCTBIN2	LSH	Q•2•QPOS	02550	05200		00002	TEST FOR 8 OT 9
.	C2571			JP	INTOCTBIN4	02551	61000		02567	8 OR 9 PRESENT-ERROR RETURN
.	C2572			LSH	Q•1	02552	05000		00001	GET RID OF 3RD FLOATA BIT
.	C2573			LSH	AQ•3	02553	07000		00003	SUPPRESSED DIGIT FORMS NEW WOR D IN
.	C2574			BSK	B7•4	02554	71700		00004	AT END OF FLDATA WORD (5TH PAS S)
.	C2575			JP	INTOCTBIN2	02555	61000		02550	NO-GET MORE DIGITS
.	C2576			BSK	B1•1	02556	71100		00001	YES-TEST-END OF INPUT
.	C2577			JP	INTOCTBIN1	02557	61000		02547	NO DO 2ND WORD
.	C2600			ENT	Q•W(SIGN)	02560	10030		04607	YES GET SIGN SIGNAL
.	C2601			LSH	AQ•30D•AZERO	02561	07400		00036	IF POS NUMBER FORGET OVERFLOW TEST
.	C2602			JP	INTOCTBIN3•QNEG	02562	60300		02566	NEG NO-IF OVERFLOW THEN ERROR RETU
.	C2603			STR	Q•W(INTEGER)•AZERO	02563	14430		04605	STORE SIGNED NUMBER
.	C2604			STR	Q•CPW(INTEGER)	02564	14070		04605	
.	C2605			RPL	Y+1•W(INTOCTBIN)	02565	36030		02543	SET NORMAL RETURN
.	C2606		INTOCTBIN3	ENT	A•4•SKIP	02566	11100		00004	OVERFLOW ERROR RETURN SIGNAL
.	C2607		INTOCTBIN4	ENT	A•3	02567	11000		00003	DECIMAL DIGIT ERROR RETURN SIG NAL
.	C2610			ENT	B1•U(INTOCTBIN5)	02570	12120		02572	RESOTRE B REGISTERS
.	C2611			JP	INTOCTBIN	02571	61000		02543	EXIT
.	C2612		INTOCTBIN5	C	0	02572	00000		00000	SAVE B REGISTERS HERE
.	C2613		BINOCTFLO	JP	0	02573	61000		00000	ENTRY EXIT
.	C2614			CL	B7	02574	12700		00000	CLEAR B7 FOR COUNT
.	C2615			ENT	Q•W(INTEGER)	02575	10030		04605	ENTER INPUT WORD
.	C2616		BINOCTFL01	CL	A	02576	11000		00000	MAIN LOOP SET WORD INITIALLY T O ZER
.	C2617		BINOCTFL02	LSH	A•3	02577	06000		00003	ALLOW ROOM FOR FLOATA BITS
.	C2620			LSH	AQ•3	02600	07000		00003	INSERT 3BINARY BITS(1OCTAL DIG IT)
.	C2621			ADD	A•60•ANEG	02601	20700		00060	INSERT FLOATA CODE TEST IF WOR D FIL
.	C2622			JP	BINOCTFL02	02602	61000		02577	NOT FILLED INSERT NEXT DIGIT
.	C2623			STR	A•W(IOINTEGER+B7)	02603	15037		04613	FILLED-STORE OUTPUT

CARDS	L1 IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C2624			BSK B7•1	02604	71700 00001	ALL OUTPUT COMPLETE
.	C2625			JP BINOCIFLOI	02605	61000 02576	NO- MAKE 2ND WORD
.	C2626			JP BINOCIFLO	02606	61000 02573	AND EXIT
.	C2627	INTBCDBIN		JP 0	02607	61000 00000	ENTRY EXIT
.	C2630			STR B1•UI INTBCDBIN5)	02610	16120 02640	SAVE B REGISTERS
.	C2631			STR B2•LI INTBCDBIN5)	02611	16210 02640	
.	C2632			CL C	02612	10000 00000	SET Q TO ZERO INITALLY
.	C2633			CL B1	02613	12100 00000	INITIALIZE B REGS FOR COUNT
.	C2634	INTBCDBIN1		ENT B2•4	02614	12200 00004	
.	C2635	INTBCDBIN2		MUL 12•AZERO	02615	22400 00012	TEST OVERFLOW INTO A
.	C2636			JP INTBCDBIN3	02616	61000 02634	OVERFLOW CONDITION MET
.	C2637			ENT A•WI IOINTEGER+B1)	02617	11031 04613	GET NEXT INT DIGIT FOR CONVERT
.	C2640			LSH A•6	02620	06000 00006	RESET INPUT FOR NEXT TIME
.	C2641			STR A•WI IOINTEGER+B1)	02621	15031 04613	
.	C2642			52340 77760	02622	52340 77760	ONLY 10IGIT USED-TEST MUL OVER FLW
.	C2643			ACC C•A•QPOS	02623	26670 00000	ADD IN NXT DIGIT-TEST OVERFLOW
.	C2644			JP INTBCDBIN3	02624	61000 02634	OVERFLOW MET BY MUL OR ADD
.	C2645			BJP B2•INTBCDBIN2	02625	72200 02615	DONE WITH INPUT WORD--IF NOT R PT
.	C2646			BSK B1•1	02626	71100 00001	YES--DONE WITH INPUT
.	C2647			JP INTBCDBIN1	02627	61000 02614	NO-RPT WITH 2ND WORD
.	C2650			CNT A•WI SIGN)•AZERO	02630	11430 04607	YES-SET ACCDING TO SIGN-POS
.	C2651			CP C	02631	14000 00000	NO-MAKE NUMBER NEG
.	C2652			STR C•WI INTEGER)	02632	14030 04605	STORE OUTPUT WORD
.	C2653			RPL Y+1•WI INTBCDBIN)•SKIP	02633	36130 02607	SET NORMAL RETURN
.	C2654	INTBCDBIN3		ENT A•5	02634	11000 00005	SET ERROR RETURN MESSAGE-OVERF LO
.	C2655			ENT B1•UI INTBCDBIN5)	02635	12120 02640	RESTORE B REGS
.	C2656			ENT B2•LI INTBCDBIN5)	02636	12210 02640	
.	C2657			JP INTBCDBIN	02637	61000 02607	EXIT
.	C2660	INTBCDBIN5		C 0	02640	00000 00000	SAVE B REGS HERE
.	C2661	FRABCDBIN		ENTRY	02641	61000 00000	
.	C2662			STR B6•LI FRABCDBIN2)	02642	16610 02677	SAVE B REG
.	C2663			CL B6	02643	12600 00000	INITIALIZE
.	C2664			CL B7	02644	12700 00000	SET B6,B7,OUTPUT WORD TO ZERO
.	C2665			STR B6•WI FRACTION)	02645	16630 04606	
.	C2666			ENT A•WI FRABCDBIN4)	02646	11030 02702	RESET CONV FACTOR
.	C2667			STR A•WI FRABCDBIN3)	02647	15030 02701	
.	C2670	FRABCDBIN1		CL Q	02650	10000 00000	MAIN LOOP-INIT Q
.	C2671			ENT A•WI IOFRACTION+B6)	02651	11036 04615	TAKE INPUT WORD
.	C2672			LSH A•6	02652	06000 00006	AND GET OUT
.	C2673			STR A•WI IOFRACTION+B6)	02653	15036 04615	A SINGLE DIGIT
.	C2674			RSH AQ•5	02654	03000 00005	INTO Q AT B4
.	C2675			MUL WI FRABCDBIN3)	02655	22030 02701	CONVERT DIGIT-1(10/12)N
.	C2676			LSH AQ•2•QPOS	02656	07200 00002	SET PRODUCT TO B0--1E-FRACTION
.	C2677			ADC A•1	02657	20000 00001	ROUND IF NEC
.	C2700			ADD A•WI FRACTION)	02660	20030 04606	AND ADD IN TO
.	C2701			STR A•WI FRACTION)	02661	15030 04606	OUTPUT WORD
.	C2702			ENT Q•WI FRABCDBIN3)	02662	10030 02701	RESET CONVERSION FACTOR

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    L1 ID LABEL       TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C27C3                MUL  W(FRABCOBIN4)                       02663  22030 027C2  FROM (IO/12)N TO (10/12)N+1

   .     C27C4                RSH  AQ•2                                02664  03000 000C2
   .     C27C5                STR  A•W(FRABCDBIN3)•QPOS                02665  15230 027CI
   .     C27C6                RPL  Y+I•W(FRABCDBIN3)                   02666  36030 02701  ROUNO IF NEC
   .     C27C7                BSK  B7•4                                02667  7I700 0C0C4  OONE WITH INPUT WORO
   .     C271C                JP   FRABCOBINI                          02670  61000 02650  NO
   .     C2711                BSK  B6•1                                U2671  71600 000C1  YES-OONE WITH INPUT
   .     C2712                JP   FRABCOBINI                          02672  61000 02650  NO
   .     C27I3                ENT  C•W(FRACTION)                       02673  10030 046C6  YES-TEST SIGN
   .     C27I4                ENT  A•W(SIGN)•AZERO                     02674  II430 046C7  IS SIGN POS
   .     C2715                CP   Q                                   U2675  14000 00CC0  NO--COMPLEMENT FRACTION
   .     C27I6                STR  Q•W(FRACTION)                       02676  14030 04606
   .     C27I7 FRABCDBIN2     ENT  B6•0                                02677  12600 0C0C0  RESTORE B REG
   .     C272D                EXIT                                     02700  61010 02641
   .     C2721 FRABCDBIN3     C    0                                   02701  00000 000C0  CONVERSION FACTOR (10/12)N
   .     C2722 FRABCDBIN4     31463      14632                         02702  31463 14632  BASE CONV FACTUR=(10/12) BO
   .     C2723 BINOECFRA      ENTRY                                    02703  61000 000C0
   .     C2724                CL   B7                                  02704  12700 000C0  SET BREG
   .     C2725                ENT  Q•I                                 U2705  10000 000C1  FINO IF NO IS + OR -,
   .     C2726                ENT  A•W(FRACTION)•APOS                  02706  11630 04606  SET SIGN APPROPRIATELY
   .     C2727                STR  A•A•ANOT                            02707  15540 000C0  ANO SET NUMBER POSITIVE
   .     C2730                ENT  Q•0                                 02710  10000 0C0C0
   .     C2731                STR  Q•W(SIGN)                           02711  14030 046C7
   .     C2732                RSH  AQ•290                              02712  03000 00035  INITIALIZE
   .     C2733 BINOECFRA1     ENT  A•0                                 02713  11000 000C0  SET OUTPUT WORO TO ZERO
   .     C2734 BINDECFRA2     LSH  A•6                                 02714  06000 000C6  RESET OUTPUT WORO FOR NEXT COO
                                                                                            E
   .     C2735                STR  A•W(IOFRACTION+B7)                  02715  15037 04615  ANO STORE
   .     C2736                RSH  AQ•1                                02716  03000 000C1  SET Q FOR MUL OPERATION
   .     C2737                MUL  24                                  02717  22000 00024  PROOUCT AT B29
   .     C2740                SEL  SET•60                              02720  50000 00060  INSERT FIELOATA BITS
   .     C2741                RSE  SET•W(IOFRACTION+B7)•ANEG           02721  54737 04615  INSERT NEW CODE,WORD FILLEO
   .     C2742                JP   BINOECFRA2                          02722  61000 02714  NO-KEEP FILLING SAME WORO
   .     C2743                BSK  B7•1                                02723  71700 00CC1  YES-ARE BOTH WOROS FILLEO
   .     C2744                JP   BINDECFRAI                          02724  61000 02713  NO-OO SECONO WORO
   .     C2745                EXIT                                     02725  61010 02703
   .     C2746 SLPZRC         ENTRY                                    02726  61000 000C0
   .     C2747                STR  B6•L(SUPBSTOR)                      02727  16610 02761
   .     C2750                ENT  B7•L(SUPZRO)                        02730  12710 02726
   .     C2751                RPL  Y+I•L(SUPZRO)                       02731  36010 02726
   .     C2752                ENT  B6•L(B7)                            02732  12617 000C0  NO OF WROS
   .     C2753                STR  B6•L(SUPZRO3)                       02733  16610 02747
   .     C2754                ENT  B6•1                                02734  12600 0000I
   .     C2755                ENT  B7•U(B7)                            02735  12727 00000  AOORESS
   .     C2756 SLPZRCI        ENT  Q•W(B7)                             02736  10037 000C0  BRING NEXT (1ST) WORD
   .     C2757 SLPZRC2        CL   A•                                  02737  11000 000C0
   .     C2760                LSH  AQ•6                                02740  07000 000C6  MOVE 1 OIGIT INTO A
   .     C276I                COM  A•6I•YMORE                          02741  04700 00061  TEST FOR EQUAL TO 60
   .     C2762                JP   SUPZRO4                             02742  61000 02754  IF NOT, JUMP TO CLEAN-UP
   .     C2763                AOD  Q•O•QZERO                           02743  26400 000C0  IF SO, TEST FOR WORD EXHAUSTED
   .     C2764                JP   SUPZRO2                             02744  61000 02737  IF MORE OIGITS, RETURN TO TEST
   .     C2765                CL   W(B7)                               02745  16037 00000
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CARDS	L1 IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C2766		ENT	B7*1+B7	02746	12707 00001	IF NOT,BUMP AOORESS OF WORO
.	C2767	SLPZRC3	BSK	B6*NIL	02747	71600 000C0	TEST FOR ALL WOROS OONE
.	C2770		JP	SUPZR01	02750	61000 02736	RETURN FOR NEXT WORO
.	C2771		ENT	A*60	02751	11000 00060	IF WOROS ALL ZERO, PRINT 1
.	C2772		ENT	B7*B7-1	02752	12707 77776	
.	C2773		JP	SUPZR05	02753	61000 02760	
.	C2774	SLPZRC4	ADD	Q*0*QNOT	02754	26500 000C0	WHEN FINO NON-ZERO
.	C2775		JP	SUPZR05	02755	61000 02760	
.	C2776		LSH	AQ*6	02756	07000 00006	MOVE REST OF WORO TO A
.	C2777		JP	SUPZR04	02757	61000 02754	
.	C3CCC	SLPZRC5	STR	A*W(B7)	02760	15037 0C0C0	STORE BACK IN PROPER SLOT
.	C3CC1	SLPBSTOR	ENT	B6*NIL	02761	12600 000C0	
.	C3CC2		EXIT		02762	61010 02726	
.	C3CC3	CCFRNC	ENTRY		02763	61000 00000	
.	C3CC4		ENT	A*90	02764	11000 00011	
.	C3CC5		SUB	A*W(BETA)	02765	21030 04604	
.	C3CC6		ENT	B7*A	02766	12770 000C0	PUT 9-BETA IN B7
.	C3CC7		ENT	Q*W(IOFRACTION+1)	02767	10030 04616	BRING FLOATA FRACTION TO AQ
.	C3C10		ENT	A*W(IOFRACTION)	02770	11030 04615	
.	C3C11		CL	W(IOFRACTION)	02771	16030 04615	
.	C3C12		CL	W(IOFRACTION+1)	02772	16030 04616	
.	C3C13		SEL	CL*W(HIBIT)	02773	52030 03071	
.	C3C14	CCFRNC1	PJP	B7*COFRND2	02774	72700 02776	SUBTRACT 1 FROM B7
.	C3C15		JP	COFRN03	02775	61000 030C0	WHEN B7 IS 0, STOP SHIFTING
.	C3C16	CCFRNC2	RSH	AQ*6	02776	03000 0C0C6	SHIFT OFF 1 OIGIT
.	C3017		JP	COFRN01	02777	61000 02774	RETURN TO TEST B7
.	C3C2C	CCFRNC3	LSH	AQ*540	03000	07000 00066	PUT BETA+1TH OIGIT IN A1-6
.	C3C21		SEL	SET*W(HIHIBIT)	03001	50030 03071	
.	C3C22		COM	A*W(SIXTYFIVE)*YMORE	03002	04730 03073	
.	C3C23		JP	COFRND5	03003	61000 03015	IF MORE THAN 4, GO TO AOO 1
.	C3C24		SEL	CL*W(M6L)	03004	52030 03074	IF LESS THAN 5, CLEAR IT
.	C3C25		ADD	Q*0*QNOT	03005	26500 000C0	
.	C3C26		JP	COFRN041*AZERO	03006	60400 03012	
.	C3C27	CCFRNC4	LSH	AQ*1*ANEG	03007	07700 00001	LEFT JUSTIFY FRACTION
.	C3C30		JP	COFRN04	03010	61000 03007	
.	C3C31		RSH	AQ*1	03011	03000 00001	PUT HIGH ORDER BIT BACK ON
.	C3C32	CCFRNC41	STR	A*W(IOFRACTION)	03012	15030 04615	STORE AWAY
.	C3C33		STR	Q*W(IOFRACTION+1)	03013	14030 04616	
.	C3C34		JP	COFRN0B1	03014	61000 03053	
.	C3C35	CCFRNC5	SEL	CL*W(M6L)	03015	52030 03074	IF MUST AOO 1, CLEAR EXTRA OIG IT
.	C3C36		LSH	AQ*540	03016	07000 00066	SHIFT LOW-ORDER OIGIT TO TOP O F A
.	C3C37		COM	A*W(SEVENTYONE)*YMORE	03017	04730 03075	TEST EQUAL TO 71
.	C3C40		JP	COFRN05I*ANOT	03020	60500 03025	IF SO, RETURN TO TEST NEXT OIG IT
.	C3C41		JP	COFRN06*AZERO	03021	60400 03035	IF NOT, TEST FOR FRACTION ALL O
.	C3C42		ADC	A*W(BIT5)	03022	20030 03076	IF NOT, AOO 1 TO OIGIT
.	C3C43		LSH	AQ*6	03023	07000 00006	RIGHT JUSTIFY FRACTION
.	C3C44		JP	COFRN04	03024	61000 030C7	
.	C3C45	CCFRNC51	JP	COFRN05*ANEG	03025	60700 03015	OIGIT MAY HAVE HAO HIBIT
.	C3C46		SEL	SET*W(HIBIT)	03026	50030 03071	CLEARED, SO RESTORE AND

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CAROS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C3047                COM  A•W(SEVENTYONE)•YMORE              03027  04730 03075
   .     C3C50                JP   COFRNO5                            03030  61000 03015
   .     C3C51                ADD  A•W(BIT5)                          03031  20030 03076
   .     C3C52 CCFRNC52       LSH  AQ•6•ANEG                          03032  07700 00006
   .     C3C53                JP   COFRND52                           03033  61000 03032
   .     C3C54                JP   COFRNO41                           03034  61000 03012
   .     C3055 CCFRNC6        ENT  C•W(IOINTEGER+1)                   03035  10030 04614
   .     C3056                ENT  A•W(IOINTEGER)                     03036  11030 04613
   .     C3057                JP   COFRNO7+1                          03037  61000 03041
   .     C3C60 CCFRNC7        SEL  CL•W(M6L)                          03040  52030 03074
   .     C3C61                LSH  AQ•540                             03041  07000 00066
   .     C3062                COM  A•W(SEVENTYCNE)•YMORE              03042  04730 03075
   .     C3063                ADD  A•W(BIT5)                          03043  20030 03076
   .     C3C64 CCFRNDB        LSH  AQ•6•ANEG                          03044  07700 00006
   .     C3065                JP   COFRNOB                            03045  61000 03044
   .     C3066                SEL  SET•W(SIXTIES)                     03046  50030 01557
   .     C3C67                STR  A•W(IOINTEGER)                     03047  15030 04613
   .     C3C70                STR  Q•A                                03050  14040 00000
   .     C3071                SEL  SET•W(SIXTIES)                     03051  50030 01557
   .     C3072                STR  A•W(IOINTEGER+1)                   03052  15030 04614
   .     C3C73 CCFRNCB1       ENT  B7•W(BETA)                         03053  12730 04604
   .     C3074                BJP  B7•COFRNO9                         03054  72700 03056
   .     C3C75                JP   COFRNO11                           03055  61000 03065
   .     C3C76 CCFRND9        ENT  A•W(SIXTY)                         03056  11030 03072
   .     C3077                CL   Q•                                 03057  10000 00000
   .     C31C0                BJP  B7•COFRNO10                        03060  72700 03062
   .     C3101                JP   COFRNO11                           03061  61000 03065
   .     C31C2 CCFRND1C       LSH  AQ•540                             03062  07000 00066
   .     C3103                SEL  SET•W(SIXTY)                       03063  50030 03072
   .     C31C4                BJP  B7•COFRNO10                        03064  72700 03062
   .     C31C5 CCFRNC11       RSE  SET•W(IOFRACTION)                  03065  54030 04615
   .     C31C6                STR  Q•A                                03066  14040 00000
   .     C31C7                RSE  SET•W(IOFRACTION+1)                03067  54030 04616
   .     C3110                EXIT                                    03070  61010 02763
   .     C3111 HIBIT          4000C      0                            03071  40000 00000
   .     C3112 SIXTY          60000      0                            03072  60000 00000
   .     C3113 SIXTYFIVE      6500C      0                            03073  65000 00000
   .     C3114 M6L            7700C      0                            03074  77000 00000
   .     C3115 SEVENTYCNE     7100C      0                            03075  71000 00000
   .     C3116 BIT5           0100C      0                            03076  01000 00000
   .     C3117 SPACES         C505C      50505                        03077  05050 50505
   .     C3120 CINFIX         ENTRY                                   03100  61000 00000
   .     C3121                STR  B1•L(CINFXT1)                      03101  16110 03225
   .     C3122                STR  B2•L(CINFXT1+1)                    03102  16210 03226
   .     C3123                STR  B3•L(CINFXT1+2)                    03103  16310 03227
   .     C3124                STR  B4•L(CINFXT1+3)                    03104  16410 03230
   .     C3125                CL   W(FXCODE)                          03105  16030 03274
   .     C3126 CINF1          ENT  B2•3                               03106  12200 00003  STRIP FIELDATA CODE =
   .     C3127                ENT  C•W(CINFMSK)                       03107  10030 03232
   .     C3130 CINFSTRP       CL   A•                                 03110  11000 00000
   .     C3131                RSE  SO•W(IOINTEGER+B2)                 03111  57032 04613
   .     C3132                BJP  B2•CINFSTRP                        03112  72200 03110
   .     C3133                CL   C•                                 03113  10000 00000
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CARDS	LI ID	LABEL	LA	STATEMENT	LOC	F JKB Y	NOTES
.	C3134		ENT	A•L(IOEXPONENT)	03114	11010 04617	
.	C3135		SEL	CL•6060	03115	52000 06060	
.	C3136		LSH	AQ•24D	03116	07000 00030	
.	C3137		RSH	A•24D	03117	02000 00030	
.	C3140		STR	A•W(IOEXPONENT)	03120	15030 04617	
.	C3141		MUL	12	03121	22000 00012	
.	C3142		RPL	Y•Q•W(IOEXPONENT)•ANOT	03122	34530 04617	IS EXP = 0
.	C3143		JP	CINF3	03123	61000 03175	YES
.	C3144		ENT	B1•A	03124	12170 00000	
.	C3145		ENT	A•W1EXPSIGN)•AZERO	03125	11430 04620	
.	C3146		JP	CINF3-1	03126	61000 03174	
.	C3147		ENT	A•100	03127	11000 00012	
.	C3150		SUB	A•W(NOINTS)	03130	21030 04610	
.	C3151		COM	A•B1•YLESS	03131	04601 00000	
.	C3152		JP	CINFERR1	03132	61000 03233	
.	C3153		JP	CINF30-2	03133	61000 03153	
.	C3154	CINF21	ENT	A•W(IOINTEGER)	03134	11030 04613	
.	C3155		ENT	Q•W1IOINTEGER+1)	03135	10030 04614	
.	C3156		LSH	AQ•6	03136	07000 00006	
.	C3157		STR	A•W(IOINTEGER)	03137	15030 04613	
.	C316C		CL	A•	03140	11000 00000	
.	C3161		LSH	AQ•24D	03141	07000 00030	
.	C3162		ENT	Q•W(IOFRACTION)	03142	10030 04615	
.	C3163		LSH	AQ•6	03143	07000 00006	
.	C3164		STR	A•W(IOINTEGER+1)	03144	15030 04614	
.	C3165		CL	A•	03145	11000 00000	
.	C3166		LSH	AQ•24D	03146	07000 00030	
.	C3167		ENT	Q•W(IOFRACTION+1)	03147	10030 04616	
.	C3170		LSH	AQ•6	03150	07000 00006	
.	C3171		STR	A•W(IOFRACTION)	03151	15030 04615	
.	C3172		STR	Q•W(IOFRACTION+1)	03152	14030 04616	
.	C3173		BJP	B1•CINF21	03153	72100 03134	
.	C3174		JP	CINF3	03154	61000 03175	
.	C3175	CINF3C	ENT	A•W(IOFRACTION)	03155	11030 04615	
.	C3176		ENT	Q•W1IOFRACTION+1)	03156	10030 04616	
.	C3177		RSH	AQ•6	03157	03000 00006	
.	C32C0		STR	Q•W1IOFRACTION+1)	03160	14030 04616	
.	C32C1		CL	Q•	03161	10000 00000	
.	C32C2		RSH	AQ•24D	03162	03000 00030	
.	C32C3		ENT	A•W(IOINTEGER+1)	03163	11030 04614	
.	C32C4		RSH	AQ•6	03164	03000 00006	
.	C32C5		STR	Q•W1IOFRACTION)	03165	14030 04615	
.	C32C6		CL	Q•	03166	10000 00000	
.	C32C7		RSH	AQ•24D	03167	03000 00030	
.	C3210		ENT	A•W(IOINTEGER)	03170	11030 04613	
.	C3211		RSH	AQ•6	03171	03000 00006	
.	C3212		STR	A•W(IOINTEGER)	03172	15030 04613	
.	C3213		STR	Q•W(IOINTEGER+1)	03173	14030 04614	
.	C3214		BJP	B1•CINF30	03174	72100 03155	
.	C3215	CINF3	ENT	A•W1SIGN)•ANOT	03175	11530 04607	YES-IS SIGN OF WORD + OR -
.	C3216		JP	CINFCALL	03176	61000 032C1	
.	C3217		CL	W(SIGN)	03177	16030 04607	MAKE VAL APPEAR + AND NOTE IN FXCODE

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CARDS    LI ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C3220              RPL  Y+1•W(FXCODE)                 03200  36030 03274
   .     C3221 CINFCALL     RJP  INTBCDBIN                     03201  65000 026C7  CONVERT BCO INT TO BIN
   .     C3222              JP   CINFERR3                      03202  61000 03235
   .     C3223              RJP  FRABCDBIN                     03203  65000 02641  CONVERT BCO FRA TO BIN
   .     C3224              ENT  A•W(INTEGER)                  03204  11030 04605
   .     C3225              ENT  Q•W(FRACTION)                 03205  10030 046C6
   .     C3226              LSH  Q•1                           03206  05000 00001  REMOVE SIGN BIT
   .     C3227              ENT  B2•LIC1NFIX)                  03207  12210 031C0
   .     C3230              ENT  B4•L(B2)                      03210  12412 000C0
   .     C3231              STR  B4•CPLICINFTP3)               03211  16450 03212
   .     C3232 CINFTP3      ENT  B4•NIL                        03212  12400 000C0
   .     C3233              ENT  B4•300+B4                     03213  12404 00036
   .     C3234              RSH  AQ•B4•QPOS                    03214  03204 00000
   .     C3235              JP   CINFERR1                      03215  61000 03233  OVERFLOW OCCURREO
   .     C3236              JP   CINFERR1•ANOT                 03216  60500 03233  OVERFLOW OCCURREO
   .     C3237              ENT  A•WIFXCOOE)•AZERO             03217  11430 03274  NO OVERFLOW - WAS NO ORIGINALL
                                                                                    Y MINUS
   .     C3240              CP   Q•                            03220  14000 00000  YES
   .     C3241              ENT  B4•U(B2)                      03221  12422 000C0  NO-STORE WORO IN AOORESS OESIG
                                                                                    .BY CALL
   .     C3242              STR  Q•W(B4)                       03222  14034 000C0
   .     C3243              ENT  B2•2+B2                       03223  12202 00002
   .     C3244              STR  B2•L(C1NFIX)                  03224  16210 031C0
   .     C3245 CINFXT1      ENT  B1•NIL                        03225  12100 00000
   .     C3246              ENT  B2•NIL                        03226  12200 000C0
   .     C3247              ENT  B3•NIL                        03227  12300 000C0
   .     C3250              ENT  B4•NIL                        03230  12400 000C0
   .     C3251 CINFXT       EXIT                               03231  61010 03100
   .     C3252 CINFMSK      17171     71717                    03232  17171 71717
   .     C3253 CINFERR1     ENT  A•22•SKIP                     03233  11100 00022  IMPLIES GAMMA TOO LARGE
   .     C3254 CINFERR2     ENT  A•23                          03234  11000 00023  IMPLIES E TOO LARGE   EXIT
   .     C3255 CINFERR3     ENT  B2•LIC1NF1X)                  03235  12210 031C0
   .     C3256              ENT  B2•1+B2                       03236  12202 00001
   .     C3257              JP   CINFXT1-1                     03237  61000 03224
   .     C3260 CCFFIX       ENTRY                              03240  61000 00000
   .     C3261              STR  B2•LICOFFTEM1)                03241  16210 03271
   .     C3262              STR  B3•LICOFFTEM2)                03242  16310 03272
   .     C3263              CL   WIFXCOOE)                     03243  16030 03274  INITIALIZATION
   .     C3264              CL   WISIGN)                       03244  16030 046C7
   .     C3265              ENT  B2•L(COFFIx)                  03245  12210 03240  B2 CONTAINS LOC OF ARG + GAMMA

   .     C3266              ENT  B3•UIB2)                      03246  12322 000C0
   .     C3267              ENT  A•WIB3)•ANEG                  03247  11733 00000  ARGUMENT UNTO A TEST + OR -
   .     C3270              JP   COFF1                         03250  61000 03253  + CONTINUE
   .     C3271              STR  A•W(FXCOOE)                   03251  15030 03274
   .     C3272              CP   A•                            03252  15040 000C0  -
   .     C3273 CCFF1        CL   Q•                            03253  10000 000C0
   .     C3274              ENT  B2•LIB2)                      03254  12212 00000
   .     C3275              RSH  AQ•B2                         03255  03002 00000
   .     C3276              STR  A•W(INTEGER)                  03256  15030 04605
   .     C3277              LSH  Q•290                         03257  05000 00035
   .     C33C0              STR  Q•WIFRACTION)                 03260  14030 04606
   .     C3301              RJP  BINOECINT                     03261  65000 02514  CONVERT BIN INT TO FLOTA
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CAROS    LI ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C33C2                RJP  B(NOECFRA                          03262  65000 027C3  CONVERT B(N FRAC TO FLOTA
   .     C33C3                RJP  COFRNO                             03263  65000 02763
   .     C33C4                RJP  SUPZRO                             03264  65000 02726
   .     C33C5                U-TAG      (O(NTEGER•2                  03265  04613 000C2
   .     C33C6                ENT  A•W(FXCOOE)•AZERO                  03266  11430 03274
   .     C33C7                STR  A•W(S(GN)                          03267  15030 04607
   .     C3310                RPL  Y+1•L(COFFIX)                      03270  36010 03240
   .     C3311 CCFFTEM1       ENT  B2•0                               03271  12200 000C0
   .     C3312 CCFFTEM2       ENT  B3•0                               03272  12300 0C0C0
   .     C3313                EX(T                                    03273  61010 03240
   .     C3314 FXCODE         C    0                                  03274  00000 000C0
   .     C3315 C(NFLT         ENTRY                                   03275  61000 000C0
   .     C3316                STR  B4•L(CNFLTXT)                      03276  16410 03424
   .     C3317                STR  B5•L(CNFLTXT+1)                    03277  16510 03425
   .     C3320                STR  B6•L(CNFLTXT+2)                    03300  16610 03426
   .     C3321                STR  B1•L(CNFLTXT+3)                    03301  16110 03427
   .     C3322                ENT  B1•1                               03302  12100 00001
   .     C3323                ENT  A•W(CNFLTP4)                       03303  11030 03436  NO
   .     C3324                STR  A•W(CNFLTO1)                       03304  15030 03402
   .     C3325                ENT  A•W(CNFLTP6)                       03305  11030 03440
   .     C3326                STR  A•W(CNFLT11)                       03306  15030 03413
   .     C3327                ENT  A•L((OEXPONENT)                    03307  11010 04617  SEPARATE EXP INTO
   .     C3330                SEL  CL•6060                            03310  52000 06060  TENS ANO UN(TS O(GIT
   .     C3331                RSH  AQ•6                               03311  03000 000C6
   .     C3332                STR  A•W(CNFLTP1)                       03312  15030 03432  TENS OIGIT
   .     C3333                CL   A•                                 03313  11000 000C0
   .     C3334                LSH  AQ•6                               03314  07000 000C6
   .     C3335                STR  A•W(CNFLTP2)                       03315  15030 03433  UNITS DIGIT
   .     C3336                ENT  A•W(SIGN)•AZERO                    03316  11430 04607  (S WORD PLUS
   .     C3337                CL   W(SIGN)                            03317  16030 04607
   .     C3340                STR  A•W(CNFLTPSIN)                     03320  15030 03434
   .     C3341                ENT  B7•3                               03321  12700 000C3  CLEAR 60-S FROM INTEGER + FRAC
                                                                                         TION
   .     C3342                ENT  Q•W(CINFMSK)                       03322  10030 03232  X
   .     C3343                CL   A•                                 03323  11000 000C0  X
   .     C3344                RSE  SU•W((OINTEGER+B7)                 03324  57037 04613  X
   .     C3345                BJP  B7•$-2                             03325  72700 03323  X
   .     C3346                RJP  (NTBCOB(N                          03326  65000 02607  CONVERT BCD TO BIN
   .     C3347                JP   CNFLTERR1                          03327  61000 03431
   .     C3350                RJP  FRABCOB(N                          03330  65000 02641
   .     C3351                ENT  A•W((NTEGER)•ANOT                  03331  11530 046C5
   .     C3352                ENT  A•W(FRACT(ON)•AZERO                03332  11430 046C6
   .     C3353                JP   $+4                                03333  61000 03337
   .     C3354                CL   W(EXPONENT)                        03334  16030 04611
   .     C3355                CL   W(FPFRACT(ON)                      03335  16030 04612
   .     C3356                JP   CNFLTXT-1                          03336  61000 03423
   .     C3357                ENT  B6•40000                           03337  12600 40000  SET UP EXP OF ZERO BASE 2
   .     C3360                ENT  A•W((NTEGER)                       03340  11030 046C5
   .     C3361                ENT  Q•W(FRACT(ON)                      03341  10030 04606
   .     C3362                LSH  Q•1                                03342  05000 000C1  GET RID OF SIGN BIT
   .     C3363                JP   CNFLT                              03343  61000 03345
   .     C3364                RSH  AQ•1                               03344  03000 00001  NORMALIZE
   .     C3365 CNFLT          AOO  A•O•ANOT                           03345  20500 000C0  IS WORO NORMALIZED
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CARDS	L1 (O	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C3366		JP	CNFLNON	03346	61000 03351	YES IF THERE WAS AN INTEGER
.	C3367		ENT	B6•1+B6	03347	12606 00001	NO (NCREASE EXP BY 1
.	C3370		JP	CNFLT-1	03350	61000 03344	CONTINUE
.	C3371	CNFLNON	JP	CNFLNONO1•QNEG	03351	60300 03355	TEST IF WORD REALLY NORMALIZED
.	C3372		LSH	C•I	03352	05000 00001	NO THIS IS FRACTION TO BE NORM ALIZED
.	C3373		ENT	B6•B6-1	03353	12606 77776	DECREASE EXP BY 1
.	C3374		JP	CNFLNON	03354	61000 03351	
.	C3375	CNFLNONC1	LSH	AQ•280•QNEG	03355	07300 00034	INSERT TWO SIGN BITS - ROUND
.	C3376		JP	CNFLNON1	03356	61000 03365	NO
.	C3377		ADD	A•1	03357	20000 00001	YES
.	C3400		CL	C•	03360	10000 00000	
.	C3401		LSH	AQ•1•APOS	03361	07600 00001	DID ROUND CARRY TO SIGN
.	C3402		LSH	AQ•580•SKIP	03362	07100 00072	YES
.	C3403		RSH	AQ•1•SKIP	03363	03100 00001	NO
.	C3404		ENT	B6•1+B6	03364	12606 00001	
.	C3405	CNFLNON1	STR	A•W(FPFRACTION)	03365	15030 04612	
.	C3406		STR	B6•W(EXPONENT)	03366	16630 04611	
.	C3407		ENT	A•W(EXPSIGN)•ANOT	03367	11530 04620	IS EXP P OR -
.	C3410		JP	CNFLNON2	03370	61000 03375	+EXP
.	C3411		ENT	A•W(CNFLTP3)	03371	11030 03435	CHANGE INSTRUCTION FOR
.	C3412		STR	A•W(CNFLTO1)	03372	15030 03402	MINUS EXPONENT
.	C3413		ENT	A•W(CNFLTP5)	03373	11030 03437	
.	C3414		STR	A•W(CNFLT11)	03374	15030 03413	
.	C3415	CNFLNON2	ENT	A•W(CNFLTP2)•ANOT	03375	11530 03433	IS THERE A UNITS DIGIT IN EXP 6.10
.	C3416		JP	CNFLTO11	03376	61000 03406	NO CHECK TENS DIGIT
.	C3417		LSH	A•1	03377	06000 00001	YES,MUL EXP BY 2 TO OBTAIN
.	C3420		ENT	B6•A	03400	12670 00000	INCREMENT OF CONSTANT TO MUL B Y
.	C3421		ENT	B4•EXPONENT	03401	12400 04611	SET UP FOR FP MUL
.	C3422	CNFLTO1	ENT	B5•TEN1-2+B6	03402	12506 03712	
.	C3423		ENT	B6•EXPONENT	03403	12600 04611	
.	C3424		ENT	B7•02	03404	12700 00002	
.	C3425		RJP	FLTPT	03405	65000 06222	
.	C3426	CNFLTC11	ENT	A•W(CNFLTP1)•ANOT	03406	11530 03432	TEST TEN-S DIGIT OF EXP 6.10
.	C3427		JP	CNFLT12	03407	61000 03417	NO DIGIT
.	C3430		LSH	A•1	03410	06000 00001	MUL EXP BY 2 TO OBTAIN
.	C3431		ENT	B6•A	03411	12670 00000	CORRECT INCREMENT OF CONSTANT
.	C3432		ENT	B4•EXPONENT	03412	12400 04611	SET UP FOR FP MUL
.	C3433	CNFLT11	ENT	B5•TEN12-2+B6	03413	12506 03734	
.	C3434		ENT	B6•EXPONENT	03414	12600 04611	
.	C3435		ENT	B7•02	03415	12700 00002	
.	C3436		RJP	FLTPT	03416	65000 06222	
.	C3437	CNFLT12	ENT	A•W(CNFLTPSIN)•ANOT	03417	11530 03434	WAS ORIG SIGN OF WORD -
.	C3440		JP	CNFLT3+1	03420	61000 03423	NO-EXIT
.	C3441		ENT	A•W(FPFRACTION)	03421	11030 04612	YES-COMPLEMENT WORD
.	C3442	CNFLT3	STR	A•CPW(FPFRACTION)	03422	15070 04612	
.	C3443		RPL	Y+1•L(CINFLT)	03423	36010 03275	
.	C3444	CNFLTXT	ENT	B4•NIL	03424	12400 00000	
.	C3445		ENT	B5•NIL	03425	12500 00000	

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                    ........................   SPURT OUTPUT NO. 210      ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C3446                ENT  B6•NIL                             03426  12600 00000
   .     C3447                ENT  B1•NIL                             03427  12100 00000
   .     C3450                EXIT                                    03430  61010 03275
   .     C3451 CNFLTERR1      JP   CNFLTXT                            03431  61000 03424
   .     C3452 CNFLTP1        C    0                                  03432  00000 00000
   .     C3453 CNFLTP2        C    0                                  03433  00000 00000
   .     C3454 CNFLTPSIN      C    0                                  03434  00000 00000
   .     C3455 CNFLTP3        ENT  B5•MTEN1-2+B6                      03435  12506 03656
   .     C3456 CNFLTP4        ENT  B5•TEN1-2+B6                       03436  12506 03712
   .     C3457 CNFLTP5        ENT  B5•MTEN12-2+B6                     03437  12506 03700
   .     C3460 CNFLTP6        ENT  B5•TEN12-2+B6                      03440  12506 03734
   .     C3461                COMMENT   SUBROUTINE                                         TO CONVERT INTERNAL FLOATING P
                                                                                            T
   .     C3462                COMMENT   NUMBER                                             TO OUTPUT EXPONENTIAL FORM
   .     C3463 CCTFLT         ENTRY                                   03441  61000 00000
   .     C3464                STR  B4•L(COTXT)                        03442  16410 03577
   .     C3465                STR  B5•L(COTXT+1)                      03443  16510 03600
   .     C3466                STR  B6•L(COTXT+2)                      03444  16610 03601
   .     C3467                STR  B1•L(COTXT+3)                      03445  16110 03602
   .     C3470                ENT  B1•1                               03446  12100 00001
   .     C3471                ENT  B7•L(COTFLT)                       03447  12710 03441
   .     C3472                ENT  B7•U(B7)                           03450  12727 00000  GET AOORESS OF FLT PT NO.
   .     C3473                RPL  Y+1•L(COTFLT)                      03451  36010 03441  AOJUST EXIT OT ERROR RETURN
   .     C3474                CL   W(IOEXPONENT)                      03452  16030 04617
   .     C3475                CL   W(SINTEMP)                         03453  16030 03657
   .     C3476                CL   Q•                                 03454  10000 00000
   .     C3477                ENT  A•W(B7+1)•ANOT                     03455  11537 00001  IF NUMBER O, EXIT
   .     C3500                JP   COT7                               03456  61000 03546
   .     C3501                ENT  A•W(B7+1)•APOS                     03457  11637 00001  TEST SIGN OF FRACTION
   .     C3502                STR  A•CPW(FPFRACTION)•SKIP             03460  15170 04612  MAKE FRACTION LOOK POS
   .     C3503                STR  A•W(FPFRACTION)•SKIP               03461  15130 04612
   .     C3504                STR  A•W(SINTEMP)                       03462  15030 03657  STORE MINUS INOICATION
   .     C3505                ENT  A•LX(B7)                           03463  11057 00000
   .     C3506                STR  A•L(EXPONENT)•ANEG                 03464  15710 04611  TEST SIGN OF EXP
   .     C3507                JP   COTNEG1                            03465  61000 03604  + IMPLIES NEG EXPONENT
   .     C3510                CL   W(EXPSIGN)                         03466  16030 04620  STORE + SIGN OF EXP
   .     C3511 CCT1           ENT  A•L(EXPONENT)                      03467  11010 04611
   .     C3512                COM  A•L(TEN12)•YLESS                   03470  04610 03736
   .     C3513                JP   COT2                               03471  61000 03510  NO. IS LESS THAN 10 TO 10TH
   .     C3514                ENT  Q•X77777                           03472  10040 77777
   .     C3515                COM  MASK•L(TEN12)•AZERO                03473  43410 03736
   .     C3516                JP   COT11                              03474  61000 03500  NO. IS MORE THAN 10 TO 10TH
   .     C3517                ENT  A•W(FPFRACTION)                    03475  11030 04612  IF EXP =, TEST FRACTIONS
   .     C3520                COM  A•W(TEN12+1)•YLESS                 03476  04630 03737
   .     C3521                JP   COT2                               03477  61000 03510  NO. IS LESS 10 TO 10TH
   .     C3522 CCT11          ENT  B4•EXPONENT                        03500  12400 04611
   .     C3523                ENT  B5•MTEN12                          03501  12500 03702
   .     C3524                ENT  B6•EXPONENT                        03502  12600 04611
   .     C3525                ENT  B7•02                              03503  12700 00002
   .     C3526                RJP  FLTPT                              03504  65000 06222
   .     C3527                ENT  A•100                              03505  11000 00012
   .     C3530                RPL  A+Y•W(IOEXPONENT)                  03506  24030 04617  AOO 10 TO OUTPUT EXP
   .     C3531                JP   COT1                               03507  61000 03467  RETURN TO TEST NEW NO.
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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C3532 CCT2          ENT  B7•90                        03510  12700 00011
   .     C3533               ENT  B6•180                       03511  12600 00022
   .     C3534               ENT  Q•X77777                     03512  10040 77777
   .     C3535 CCT3          ENT  A•L(EXPONENT)                03513  11010 04611
   .     C3536               COM  A•L(TEN1+B6)•YLESS           03514  04616 03714
   .     C3537               JP   COT4                         03515  61000 03523  NO.LESS THAN THAT PWR OF 10
   .     C3540               COM  MASK•L(TEN1+B6)•AZERO        03516  43416 03714
   .     C3541               JP   COT5                         03517  61000 03526  IF GRTR, GO TO MULTIPLY
   .     C3542               ENT  A•W(FPFRACTION)              03520  11030 04612  IF EXP =, TEST FRACTIONS
   .     C3543               COM  A•W(TEN1+B6+1)•YMORE         03521  04736 03715
   .     C3544               JP   COT5                         03522  61000 03526
   .     C3545 CCT4          ENT  B6•B6-2                      03523  12606 77775  IF NO.= OR LESS, LOOK AT
   .     C3546               BJP  B7•COT3                      03524  72700 03513  NEXT LOWER PWR OF 10
   .     C3547               JP   COT6                         03525  61000 03535  NO. NEED NOT BE REDUCED
   .     C3550 CCT5          ENT  A•1+B7                       03526  11007 00001
   .     C3551               RPL  A+Y•W(IOEXPONENT)            03527  24030 04617
   .     C3552               ENT  B4•EXPONENT                  03530  12400 04611
   .     C3553               ENT  B5•MTEN1+B6                  03531  12506 03660
   .     C3554               ENT  B6•EXPONENT                  03532  12600 04611
   .     C3555               ENT  B7•02                        03533  12700 00002
   .     C3556               RJP  FLTPT                        03534  65000 06222
   .     C3557 CCT6          ENT  Q•W(FPFRACTION)              03535  10030 04612  COMMON PATH AFTER MULTIPLYING

   .     C3560               LSH  Q•2                          03536  05000 00002
   .     C3561               ENT  A•L(EXPONENT)                03537  11010 04611
   .     C3562               SUB  A•40000•ANOT                 03540  21500 400C0
   .     C3563               JP   COT7-1                       03541  61000 03545
   .     C3564               CL   A•                           03542  11000 000C0
   .     C3565               ENT  B7•L(EXPONENT)               03543  12710 04611
   .     C3566               LSH  AQ•B7-40000                  03544  07007 37777  SHIFT INTEGER PORTION TO A
   .     C3567               LSH  Q•290                        03545  05000 00035
   .     C3570 CCT7          STR  A•W(INTEGER)                 03546  15030 04605
   .     C3571               STR  Q•W(FRACTION)                03547  14030 046C6
   .     C3572               RJP  BINOECINT                    03550  65000 02514
   .     C3573               RJP  BINOECFRA                    03551  65000 027C3
   .     C3574               RJP  COFRNO                       03552  65000 02763  TRUNCATE BETA+1 AND ROUND
   .     C3575               RJP  SUPZRO                       03553  65000 02726  SUPPRESS LEADING ZEROS
   .     C3576               U-TAG     IOINTEGER•2             03554  04613 00002
   .     C3577               ENT  A•W(IOINTEGER+1)             03555  11030 04614
   .     C36C0               SEL  CP•06160•AZERO               03556  51400 06160  TEST FOR NUMBER ROUNDED TO 10
   .     C36C1               JP   $+4                          03557  61000 03563
   .     C36C2               PUT  61•W(IOINTEGER+1)            03560  10000 00061  IF SO JAM IN A 1
                                                                03561  14030 04614
   .     C36C3               RPL  Y+1•W(IOEXPONENT)            03562  36030 04617  AND BUMP EXPONENT BY 1
   .     C36C4               PUT  W(SINTEMP)•W(SIGN)           03563  10030 03657
                                                                03564  14030 04607
   .     C36C5               ENT  Q•W(IOEXPONENT)              03565  10030 04617
   .     C36C6               CL   A•                           03566  11000 00000
   .     C36C7               COM  Q•51•YMORE                   03567  04300 00051  TEST FOR EXP GRTR THAN 40
   .     C3610               JP   COTXT                        03570  61000 03577  IF SO, ERROR
   .     C3611               CIV  12                           03571  23000 00012  CONVERT TO DECIMAL
   .     C3612               LSH  A•240                        03572  06000 00030
   .     C3613               LSH  AQ•360•AZERO                 03573  07400 00044
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CAROS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

    .    C3614                SEL  SET•W(SIXTIES)                     03574  50030 01557  CONVERT TO FLOATA
    .    C3615                STR  A•W(IOEXPONENT)                    03575  15030 04617  STORE IN OUTPUT
    .    C3616                RPL  Y+1•L(COTFLT)                      03576  36010 03441  ADJUST EXIT TO NORMAL RETURN

    .    C3617 CCTXT          ENT  B4•NIL                             03577  12400 0C0C0  EXIT
    .    C3620                ENT  B5•NIL                             03600  12500 000C0
    .    C3621                ENT  B6•NIL                             03601  12600 000C0
    .    C3622                ENT  B1•NIL                             03602  12100 00CC0
    .    C3623                EXIT                                    03603  61010 03441
    .    C3624                COMMENT   THIS                                                BRANCH FOR NEGATIVE EXPONENTS
    .    C3625 CCTNEG1        STR  A•W(EXPSIGN)                       03604  15030 04620
    .    C3626                ENT  A•L(EXPONENT)                      03605  11010 04611
    .    C3627                COM  A•L(MTEN12)•YLESS                  03606  04610 03702
    .    C3630                JP   COTNEG11                           03607  61000 03616  NO LESS THAN 10 TO -10TH
    .    C3631                ENT  Q•X77777                           03610  10040 77777
    .    C3632                COM  MASK•L(MTEN12)•AZERO               03611  43410 037C2
    .    C3633                JP   COTNEG2                            03612  61000 03626  NO GRTR THAN 10 TO -10TH
    .    C3634                ENT  A•W(FPFRACTION)                    03613  11030 04612
    .    C3635                COM  A•W(MTEN12+1)•YMORE                03614  04730 03703
    .    C3636                JP   COTNEG2                            03615  61000 03626  NO GRTR THAN 10 TO -10TH
    .    C3637 CCTNEG11       ENT  B4•EXPONENT                        03616  12400 04611
    .    C3640                ENT  B5•TEN12                           03617  12500 03736
    .    C3641                ENT  B6•EXPONENT                        03620  12600 04611
    .    C3642                ENT  B7•02                              03621  12700 000C2
    .    C3643                RJP  FLTPT                              03622  65000 06222
    .    C3644                ENT  A•100                              03623  11000 00012  ADD 10 TO OUTPUT EXPONENT
    .    C3645                RPL  A+Y•W(IOEXPONENT)                  03624  24030 04617
    .    C3646                JP   COTNEG1+1                          03625  61000 036C5  RETURN TO RETEST NO.
    .    C3647 CCTNEG2        ENT  B7•90                              03626  12700 00011  WHEN NO = OR GRTR THAN
    .    C3650                ENT  B6•180                             03627  12600 00022  10 TO -10TH, LOOK FOR UNITS

    .    C3651                ENT  Q•X77777                           03630  10040 77777  PWR OF 10 TO MULTIPLY BY
    .    C3652 CCTNEG3        ENT  A•L(EXPONENT)                      03631  11010 04611
    .    C3653                COM  A•L(MTEN1+B6)•YLESS                03632  04616 03660
    .    C3654                JP   COTNEG5                            03633  61000 03647
    .    C3655                COM  MASK•L(MTEN1+B6)•AZERO             03634  43416 03660
    .    C3656                JP   COTNEG4                            03635  61000 03641
    .    C3657                ENT  A•W(FPFRACTION)                    03636  11030 04612
    .    C3660                COM  A•W(MTEN1+B6+1)•YLESS              03637  04636 03661
    .    C3661                JP   COTNEG5                            03640  61000 03647
    .    C3662 CCTNEG4        ENT  B6•B6-2                            03641  12606 77775
    .    C3663                BJP  B7•COTNEG3                         03642  72700 03631
    .    C3664                ENT  B4•EXPONENT                        03643  12400 04611
    .    C3665                ENT  B5•TEN1                            03644  12500 03714
    .    C3666                RPL  Y+1•W(IOEXPONENT)                  03645  36030 04617
    .    C3667                JP   COTNEG5+4                          03646  61000 03653
    .    C3670 CCTNEG5        ENT  A•B7+2                             03647  11007 000C2
    .    C3671                RPL  A+Y•W(IOEXPONENT)                  03650  24030 04617
    .    C3672                ENT  B4•EXPONENT                        03651  12400 04611
    .    C3673                ENT  B5•TEN1+B6+2                       03652  12506 03716
    .    C3674                ENT  B6•EXPONENT                        03653  12600 04611
    .    C3675                ENT  B7•02                              03654  12700 000C2
    .    C3676                RJP  FLTPT                              03655  65000 06222
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CARDS	LI ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C3677			JP COT6	03656	61000	03535		
.	C37CC	SINTEMP		C 0	03657	00000	00000		
.	C37C1	MIEN1		0 37775	03660	00000	37775		
.	C37C2			14631 46315	03661	14631	46315		
.	C37C3	MIEN2		0 37772	03662	00000	37772		
.	C37C4			12172 70244	03663	12172	70244		
.	C37C5	MIEN3		C 37767	03664	00000	37767		
.	C37C6			10142 23351	03665	10142	23351		
.	C37C7	MIEN4		C 37763	03666	00000	37763		
.	C3710			15066 70565	03667	15066	70565		
.	C3711	MIEN5		C 37760	03670	00000	37760		
.	C3712			1237C 55304	03671	12370	553C4		
.	C3713	MIEN6		C 37755	03672	00000	37755		
.	C3714			10306 75720	03673	10306	75720		
.	C3715	MIEN7		C 37751	03674	00000	37751		
.	C3716			15327 74515	03675	15327	74515		
.	C3717	MIEN1C		C 37746	03676	00000	37746		
.	C372C			12571 43561	03677	12571	43561		
.	C3721	MIEN11		C 37743	03700	00000	37743		
.	C3722			10456 02764	03701	10456	02764		
.	C3723	MIEN12		C 37737	03702	00000	37737		
.	C3724			15574 67755	03703	15574	67755		
.	C3725	MIEN24		C 37676	03704	00000	37676		
.	C3726			13634 50206	03705	13634	50206		
.	C3727	MIEN36		C 37635	03706	00000	37635		
.	C3730			1211C 22777	03707	12110	22777		
.	C3731	MIEN5C		C 37574	03710	00000	37574		
.	C3732			10554 11423	03711	10554	11423		
.	C3733	TEN		C 37775	03712	00000	37775		
.	C3734			14631 46315	03713	14631	46315		
.	C3735	TEN1		C 40004	03714	00000	40004		
.	C3736			12000 0	03715	12000	00000		
.	C3737	TEN2		C 40007	03716	00000	40007		
.	C374C			1440C 0	03717	14400	00000		
.	C3741	TEN3		C 40012	03720	00000	40012		
.	C3742			1750C 0	03721	17500	00000		
.	C3743	TEN4		C 40016	03722	00000	40016		
.	C3744			1161C 0	03723	11610	00000		
.	C3745	TEN5		C 40021	03724	00000	40021		
.	C3746			14152 0	03725	14152	00000		
.	C3747	TEN6		C 40024	03726	00000	40024		
.	C375C			17204 40000	03727	17204	40000		
.	C3751	TEN7		C 40030	03730	00000	40030		
.	C3752			11422 64000	03731	11422	64000		
.	C3753	TEN1C		C 40033	03732	00000	40033		
.	C3754			13727 41000	03733	13727	41000		
.	C3755	TEN11		0 40036	03734	00000	40036		
.	C3756			16715 31200	03735	16715	31200		
.	C3757	TEN12		C 40042	03736	00000	40042		
.	C3760			1124C 27620	03737	11240	27620		
.	C3761	TEN24		C 40103	03740	00000	40103		
.	C3762			12657 07274	03741	12657	07274		
.	C3763	TEN36		C 40144	03742	00000	40144		

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C3764				14476 26234	03743	14476 26234	
.	C3765		TEN5C		C 40205	03744	00000 40205	
.	C3766				16543 12370	03745	16543 12370	
.	C3767		ERROR		ENT Q•77	03746	10000 00077	
.	C377C				CLEAR BOD•BUFFER-BOO	03747	70100 00120	
						03750	16030 04623	
.	C3771				COM MASK•0•ANOT	03751	43500 00000	SOURCE PROGRAM ERROR
.	C3772				JP ERROR2	03752	61000 03767	PROGRAM ERROR
.	C3773				COM MASK•20•ANOT	03753	43500 00020	MAX LIMIT
.	C3774				JP ERROR4	03754	61000 04013	MAX LIMIT
.	C3775				COM MASK•21•ANOT	03755	43500 00021	MIN LIMIT
.	C3776				JP ERROR4A	03756	61000 04014	MIN LIMIT
.	C3777		ERRCR1		ENT Q•12000	03757	10000 12000	
.	C4CCC				ENT A•ERROR1A	03760	11000 03763	
.	C4CC1				ENT B7•-17D	03761	12700 77756	
.	C4C02				JP ERROR5	03762	61000 04024	COMMON ROUTINE
.	C4CC3		ERRCR1A		FD 3• FORMAT ERROR	03763	05051 32427	
						03764	22063 10512	
						03765	27272 42705	
.	C4CC4				C403C 00000	03766	04030 00000	
.	C4CC5		ERRCR2		ENT A•0	03767	11000 00000	
.	C4CC6				ENT Q•L(INTERCOM)	03770	10010 00002	
.	C4CC7				SUB Q•2	03771	27000 00002	
.	C4C10				ENT B7•4	03772	12700 00004	
.	C4C11				LSH Q•15D	03773	05000 00017	
.	C4C12				LSH A•3	03774	06000 00003	
.	C4C13				LSH AQ•3	03775	07000 00003	
.	C4C14				BJP B7•$-2	03776	72700 03774	
.	C4C15				SEL SET•W(SIXTIES)	03777	50030 01557	
.	C4016				STR A•W(ERROR2B)	04000	15030 04011	
.	C4C17				ENT A•ERROR2A	04001	11000 04005	
.	C4C20				ENT Q•61000	04002	10000 61000	
.	C4C21				ENT B7•-27D	04003	12700 77744	
.	C4C22				JP ERROR5	04004	61000 04024	
.	C4C23		ERROR2A		FD 3• PROGRAM ERROR	04005	05052 52724	
						04006	14270 62205	
						04007	12272 72427	
.	C4C24				C505C 50505	04010	05050 50505	
.	C4C25		ERROR2B		C 0	04011	00000 00000	
.	C4C26				C403C 00000	04012	04030 00000	
.	C4C27		ERROR4		ENT Q•W(ERROR6A)•SKIP	04013	10130 04077	MAX LIMIT
.	C4C30		ERROR4A		ENT Q•W(ERROR6B)	04014	10030 04100	MIN LIMIT
.	C4C31				STR Q•W(ERROR6C)	04015	14030 04101	
.	C4C32				ENT Q•12000	04016	10000 12000	
.	C4C33				STR Q•U(COMPROCSW)	04017	14020 00422	
.	C4034				STR Q•U(INTINO3)	04020	14020 00325	
.	C4C35				ENT A•ERROR6C	04021	11000 04101	
.	C4C36				ENT B7•-34D	04022	12700 77735	
.	C4C37				CL W(BUFSLOT)	04023	16030 04575	
.	C4C4C		ERROR5		STR A•L(ERROR5A)	04024	15010 04045	COMMON ROUTINE
.	C4C41				STR Q•U(ERRORSW)	04025	14020 04064	
.	C4C42				STR B7•L(ERROR52)	04026	16710 04040	
.	C4C43				RJP SPACERITE	04027	65000 00524	

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CARDS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C4C44               ENT  A•BUFFER                           04030  11000 04743
   .     C4C45               SUB  A•B7                               04031  21007 00000
   .     C4C46               STR  A•L(ERROR51)                       04032  15010 04037
   .     C4C47               SUB  A•1                                04033  21000 00001
   .     C4C50               STR  A•L(ERROR53)                       04034  15010 04052
   .     C4C51               ENT  A•05                               04035  11000 00005
   .     C4C52               RPT  B7•ADV                             04036  70107 00000
   .     C4C53 ERROR51       STR  A•W(NIL)                           04037  15030 00000
   .     C4C54 ERROR52       ENT  B7•NIL                             04040  12700 00000
   .     C4C55               ENT  A•L(ERROR51)                       04041  11010 04037
   .     C4C56               ADD  A•B7+I                             04042  20007 00001
   .     C4C57               STR  A•L(ERRBUFWO)                      04043  15010 04556
   .     C4C6C               CL   B6•                                04044  12600 00000
   .     C4C61 ERROR5A       ENT  Q•W(NIL)                           04045  10030 00000
   .     C4C62 ERROR5B       CL   A•                                 04046  11000 00000
   .     C4C63               LSH  AQ•6•ANOT                          04047  07500 00006
   .     C4C64               JP   ERROR5E                            04050  61000 04054
   .     C4C65               BSK  B7•77777                           04051  71700 77777
   .     C4C66 ERROR53       STR  A•W(NIL+B7)•SKIP                   04052  15137 00000
   .     C4C67               JP   ERROR5C                            04053  61000 04061
   .     C4C7C ERROR5E       BSK  B6•4                               04054  71600 00004
   .     C4C71               JP   ERROR5B                            04055  61000 04046
   .     C4C72               RPL  Y+1•L(ERROR5A)                     04056  36010 04045  YES-GET NEXT WORD
   .     C4073               COM  A•LIMIT+90•YLESS                   04057  04600 04115
   .     C4C74               JP   ERROR5A                            04060  61000 04045
   .     C4C75 ERROR5C       ENT  A•12000                            04061  11000 12000  SET INTERRUPT SWITCH TO NO-OP

   .     C4C76               STR  A•U(INTOUTSW)                      04062  15020 00143
   .     C4C77 ERROR5D       ENT  A•BUFFER-1                         04063  11000 04742  NO OF CHAR TO END OF BUFFER
   .     C41C0 ERRORSW       JP   ERROR6                             04064  61000 04066
   .     C41C1               ADD  A•W(BUFSLOT)                       04065  20030 04575
   .     C41C2 ERROR6        STR  A•U(ERRBUFWO)                      04066  15020 04556
   .     C41C3               ENT  Q•12000                            04067  10000 12000
   .     C41C4               STR  Q•U(INTOUTSWO)                     04070  14020 00142
   .     C41C5               STR  Q•U(KILLOUTSW)                     04071  14020 00240
   .     C41C6               OUT  KEYOUT•W(ERRBUFWO)•MONITOR         04072  76130 04556
   .     C41C7               RJP  WESTOUT•KEY3                       04073  65300 00630
   .     C4110               JP   $+2•KEY1                           04074  61100 04076
   .     C4111               RJP  HSPERRMESS                         04075  65000 04252
   .     C4112               JP   COMPROC02+2                        04076  61000 00453
   .     C4113 ERROR6A       FO   1•  MAX                            04077  05052 20635
   .     C4114 ERROR6B       FO   1•  MIN                            04100  05052 21623
   .     C4115 ERROR6C       C    0                                  04101  00000 00000
   .     C4116               FO   2•  LIMIT =                        04102  05052 11622
                                                                     04103  16310 54405
   .     C4117 LIMIT         RESERVE   80                            04104  00000 00000
   .     C412C               C403C     00000                        04114  04030 00000
   .     C4121 HSPOUT        ENTRY                                   04115  61000 00000
   .     C4122               ENT  B2•1                               04116  12200 00001  INITIALIZE COUNTERS-TOTAL IN C
                                                                                        HARS
   .     C4123 LIN2          ENT  B4•0                               04117  12400 00000  NO OF OUT WORDS
   .     C4124               ENT  B3•4                               04120  12300 00004  5 CHAR PER WORD
   .     C4125               CL   A•                                 04121  11000 00000
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CARDS    LI ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES
   .     C4126 LOCHAR        ENT  Q•W(BUFFER-1+B2)              04122  10032 04742  GET CHARACTER
   .     C4127               SUB  Q•D4•QNOT                     04123  27500 000C4  TEST FOR END OF LINE
   .     C4130               JP   LINSW                         04124  61000 04145  YES GO SET SWITCH
   .     C4131               ACD  Q•C4                          04125  26000 00004  NO
   .     C4132               SUB  Q•C3•QZERO                    04126  27400 000C3  TEST FOR LINEFEED
   .     C4133               JP   $+4                           04127  61000 04133
   .     C4134               BSK  B2•W(BUFFCOUNT)               04130  71230 046C0
   .     C4135               JP   LOCHAR                        04131  61000 04122
   .     C4136               JP   HSPOUTFIN                     04132  61000 04152
   .     C4137               ACD  Q•D3                          04133  26000 000C3
   .     C414C               LSH  Q•24D                         04134  05000 00030
   .     C4141               LSH  AQ•6                          04135  07000 00C06  PACK CHAR IN A REGISTER
   .     C4142               BSK  B2•W(BUFFCOUNT)               04136  71230 046C0  TEST FOR LAST CHAR
   .     C4143               JP   $+2                           04137  61000 04141
   .     C4144               JP   HSPOUTFIN                     04140  61000 04152  YES GO TO WINDUP
   .     C4145               BJP  B3•LOCHAR                     04141  72300 04122  TEST FOR FULL WORD
   .     C4146               STR  A•W(HSPBUF+B4)                04142  15034 044C4  YES STORE IN PRINT BUFFER
   .     C4147               BSK  B4•-1                         04143  71400 77776  INCR WORD COUNTER
   .     C415C               JP   LOCHAR-2                      04144  61000 04120  GO INITIALIZE FOR NEXT WORD

   .     C4151 LINSW         BSK  B2•W(BUFFCOUNT)               04145  71230 046C0
   .     C4152               ENT  Q•12000•SKIP                  04146  10100 12CC0
   .     C4153               JP   HSPOUTFIN                     04147  61000 04152
   .     C4154               STR  Q•U(CRSW)                     04150  14020 04162
   .     C4155               LSH  A•6                           04151  06000 000C6
   .     C4156 HSPOUTFIN     BJP  B3•$-1                        04152  72300 04151  LOOP TO LEFT ADJ LAST WORD
   .     C4157               STR  A•W(HSPBUF+B4)                04153  15034 044C4  STORE IN PRINT BUFFER
   .     C4160               BSK  B4•-1                         04154  71400 77776  INCR WORD COUNTER
   .     C4161               STR  B4•U(PRPARAM)                 04155  16420 04157  SET NO OF WORDS
   .     C4162               RJP  U(PRLOG)                      04156  65020 63423  GO TO PRINT ROUTINE
   .     C4163 PRPARAM       C    HSPBUF                        04157  00000 044C4  UPPER-NO OF WORDS,LOWER-START
                                                                                    ADDRESS
   .     C4164               1    0                             04160  00001 000C0  ADV ONE LINE BEFORE PRINT
   .     C4165               JP   HSPOUT1                       04161  61000 04166
   .     C4166 CRSW          JP   HSPOUT                        04162  61000 04115  SWITCH-EXIT OR GET NEXT LINE
   .     C4167               ENT  Q•61000                       04163  10000 61000  JUMP  FINISHED WITH OUTPUT
   .     C4170               STR  Q•U(CRSW)                     04164  14020 04162
   .     C4171               JP   LIN2                          04165  61000 04117  GO ASSEMBLE NEXT LINE
   .     C4172 HSPOUT1       ENT  Q•61000                       04166  10000 610C0
   .     C4173               STR  Q•U(KILLOUTSW)                04167  14020 00240
   .     C4174               TERM KEYIN•INPUT                   04170  66100 00000
   .     C4175               JP   CRSW                          04171  61000 04162
   .     C4176 HSPGIN        ENTRY                              04172  61000 00000
   .     C4177               RJP  HSPIN                         04173  65000 04306  ROUTINE TO ESTABLISH LINE INDE
                                                                                    NT
   .     C42C0               RJP  INCHAR                        04174  65000 04335  ROUTINE TO LOAD BUFFER WITH IN
                                                                                    PUT DATA
   .     C42C1               ENT  Q•W(BOTSTOP)                  04175  10030 00617  ENTER GOOD DATA SYMBOLS
   .     C42C2               LSH  Q•24D                         04176  05000 00030  LEFT ADJ
   .     C42C3               STR  Q•W(HSPBUF+B4)                04177  14034 04404  STORE IN PRINTER BUFFER
   .     C42C4               BSK  B4•-1                         04200  71400 77776  INCR WORD COUNTER
   .     C42C5               STR  B4•U(HSPRNT+2)                04201  16420 04372  SET NO OF WORDS
   .     C42C6               RJP  HSPRNT                        04202  65000 04370  GO TO PRINT ROUTINE
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CARDS	L1 IO LABEL	TA STATEMENT	LOC	F JKB Y	NOTES
.	C4207	EXIT	04203	61010 04172	
.	C4210 HSPATTN	ENTRY	04204	61000 00000	
.	C4211	RJP HSPIN	04205	65000 04306	ROUTINE TO ESTABLISH LINE INOE NT
.	C4212	RJP INCHAR	04206	65000 04335	ROUTINE TO LOAO INPUT OATA
.	C4213	ENT Q•W(ATTEN)	04207	10030 04215	LOAO ATTEN WORO
.	C4214	STR Q•W(HSPBUF+B4)	04210	14034 04404	STORE IN PRINT BUFFER
.	C4215	BSK B4•-1	04211	71400 77776	INCR WORO COUNTER
.	C4216	STR B4•U(HSPRNT+2)	04212	16420 04372	SET NO OF WUROS
.	C4217	RJP HSPRNT	04213	65000 04370	GO TO PRINT ROUTINE
.	C4220	EXIT	04214	61010 04204	
.	C4221 ATTEN	FO 1• ATTN	04215	05063 13123	
.	C4222 HSPACC	ENTRY	04216	61000 00000	
.	C4223	RJP HSPIN	04217	65000 04306	ROUTINE TO ESTABLISH LINE INOE NT
.	C4224	ENT Q•W(ACCPT1)	04220	10030 04231	LOAO FIRT WORO (ACCE)
.	C4225	STR Q•W(HSPBUF+B4)	04221	14034 04404	STORE FIRT WORO
.	C4226	BSK B4•-1	04222	71400 77776	
.	C4227	ENT Q•W(ACCPT1+1)	04223	10030 04232	LOAO SECONO WORO (PTEO)
.	C4230	STR Q•W(HSPBUF+B4)	04224	14034 04404	STORE SECONO WORO
.	C4231	BSK B4•-1	04225	71400 77776	
.	C4232	STR B4•U(HSPRNT+2)	04226	16420 04372	STORE NO OF WOROS
.	C4233	RJP HSPRNT	04227	65000 04370	
.	C4234	EXIT	04230	61010 04216	
.	C4235 ACCPT1	FO 2•ACCEPTEO$	04231	06101 01225	
			04232	31121 14705	
.	C4236 HSPNCTACC	ENTRY	04233	61000 00000	
.	C4237	RJP HSPIN	04234	65000 04306	ROUTINE TO ESTABLISH LINE INOE NT
.	C4240	RJP INCHAR	04235	65000 04335	ROUTINE TO LOAO INPUT OATA
.	C4241	ENT B3•0	04236	12300 00000	
.	C4242 HSPNCT1	ENT Q•W(NOTACC1+B3)	04237	10033 04247	LOAO MESSAGE WOROS
.	C4243	STR Q•W(HSPBUF+B4)	04240	14034 04404	STORE IN PRINT BUFFER
.	C4244	BSK B4•-1	04241	71400 77776	
.	C4245	BSK B3•2	04242	71300 00002	
.	C4246	JP HSPNOT1	04243	61000 04237	
.	C4247	STR B4•U(HSPRNT+2)	04244	16420 04372	SET NO OF WUROS
.	C4250	RJP HSPRNT	04245	65000 04370	GO TO PRINT
.	C4251	EXIT	04246	61010 04233	
.	C4252 NCTACC1	FO 3• NOT ACCEPTEO	04247	05232 43105	
			04250	05061 01012	
			04251	25311 21105	
.	C4253 HSPERRMESS	ENTRY	04252	61000 00000	
.	C4254	RJP HSPIN	04253	65000 04306	ROUTINE TO ESTABLISH LINE INOE NT
.	C4255	RJP INCHAR	04254	65000 04335	ROUTINE TO LOAO INPUT OATA
.	C4256	ENT A•L(ERROR52)	04255	11010 04040	GET CHAR COUNT OF MESSAGE
.	C4257	ADO A•3	04256	20000 00003	
.	C4260	STR A•CPL(ERRCNT)	04257	15050 04555	STORE NO OF CHAR
.	C4261	ENT A•L(ERRBUFWO)	04260	11010 04556	GET STARTING AOORESS
.	C4262	STR A•LI(HSPEM1)	04261	15010 04265	
.	C4263	ENT B2•0	04262	12200 00000	
.	C4264	ENT B3•4	04263	12300 00004	

CARDS	LI (D LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C4265		CL A•	04264	11000 000C0	
.	C4266 HSPEM1		ENT Q•L(NIL+B2)	04265	10012 0C0C0	GET CHAR
.	C4267		LSH Q•240	04266	0500C 00030	
.	C4270		LSH AQ•6	04267	07000 000C6	PACK IN A REGISTER
.	C4271		BSK B2•L(ERRCNT)	04270	71210 04555	TEST FOR LAST CHAR
.	C4272		JP $+2	04271	6100C 04273	
.	C4273		JP ERRMESSFIN	04272	61000 04300	YES GO TO WINOUP
.	C4274		BJP B3•HSPEM1	04273	72300 04265	TEST FOR FULL WORD
.	C4275		STR A•W(HSPBUF+B4)	04274	15034 04404	STORE IN PRINT BUFFER
.	C4276		BSK B4•-1	04275	71400 77776	YES - INCR WORD COUNTER
.	C4277		JP HSPEM1-2	04276	61000 04263	START NEXT WORD
.	C43C0		LSH A•6	04277	06000 0C0C6	
.	C4301 ERRMESSFIN		BJP B3•$-1	04300	72300 04277	LOOP TO LEFI ADJUST LAST WORD
.	C43C2		STR A•W(HSPBUF+B4)	04301	15034 044C4	STORE IN PRINT BUFFER
.	C43C3		BSK B4•-1	04302	71400 77776	INCR WORD COUNTER
.	C43C4		STR B4•U(HSPRNT+2)	04303	16420 04372	SET NO OF WURDS
.	C43C5		RJP HSPRNT	04304	65000 04370	GO TO PRINT ROUTINE
.	C43C6		EXIT	04305	61010 04252	
.	C43C7 HSPIN		ENTRY	04306	61000 0C0C0	
.	C4310		STR Q•W(HSPQSTOR)	04307	14030 04550	SAVE REGISTERS
.	C4311		STR B2•L(HSPB2STOR)	04310	16210 04552	
.	C4312		STR B3•L(HSPB3STOR)	04311	16310 04553	
.	C4313		STR B4•L(HSPB4STOR)	04312	16410 04554	
.	C4314		ENT B2•1	04313	12200 00001	INITIALIZE COUNTERS-TOTAL IN C HARS
.	C4315		ENT B3•0	04314	12300 000C0	5 PER WORD OUT
.	C4316		ENT B4•0	04315	12400 000C0	
.	C4317		RJP SPACERITE	04316	65000 00524	
.	C4320		ENT A•B7	04317	11007 000C0	NO OF CHAR IO INDENT INPUT MES SAGE
.	C4321		SUB A•80D•ANEG	04320	21700 00120	ALLOW FOR MULTI-LINE OUTPUT ME SSAGE
.	C4322		JP $-1	04321	61000 04320	
.	C4323		ADD A•800	04322	20000 00120	
.	C4324		ENT B7•A	04323	12770 0C0C0	5 SPACES OR COUNT ON LAST OUTP UT LINE
.	C4325 HSPIN1		ENT Q•W(SPACES)	04324	10030 03077	
.	C4326		LSH AQ•6	04325	07000 0C0C6	
.	C4327		BSK B3•4	04326	71300 000C4	COUNT 5 PER WORD
.	C4330		JP HSPIN2	04327	61000 04333	NOT FULL WORD
.	C4331		STR A•W(HSPBUF+B4)	04330	15034 044C4	STORE IN PRINTER BUFFER
.	C4332		CL A•	04331	11000 000C0	
.	C4333		BSK B4•-1	04332	71400 77776	INCR WORD COUNTER
.	C4334 HSPIN2		BJP B7•HSPIN1	04333	72700 04324	COUNT SPACES NEEDED-GET NEXT C HAR
.	C4335		EXIT	04334	61010 043C6	SPACES SET-GO FOR INPUT DATA
.	C4336 IACHAR		ENTRY	04335	61000 0C0C0	
.	C4337		ENT Q•1	04336	10000 00001	
.	C4340		COM Q•W(SLOTSTOR)•YMORE	04337	04330 044C3	
.	C4341		EXIT	04340	61010 04335	
.	C4342 IACHAR3		ENT Q•W(BUFFER-1+B2)	04341	10032 04742	GET INPUT CHAR
.	C4343		LSH Q•240	04342	05000 00030	

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              AOAMS-ASSOC*7/1/65

CARDS    L1 10 LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C4344                LSH  AQ*6                                04343  07000 00006  PACK IN A REGISTER
   .     C4345                BSK  B3*4                                04344  71300 00004  TEST FOR FULL WORD
   .     C4346                JP   INCHAR1                             04345  61000 04352  GET ANOTHER CHAR
   .     C4347                STR  A*W(HSPBUF+B4)                      04346  15034 04404  STORE IN PRINT BUFFER
   .     C4350                BSK  B4*150                              04347  71400 00017  TEST FOR FULL LINE
   .     C4351                ENT  A*0*SKIP                            04350  11100 00000
   .     C4352                JP   PRINTLIN                            04351  61000 04363
   .     C4353 INCHAR1        BSK  B2*W(SLOTSTOR)                      04352  71230 04403  TEST FOR LAST CHAR
   .     C4354                JP   INCHAR3                             04353  61000 04341
   .     C4355                JP   INCHAR2*AZERO                       04354  60400 04362  NO LEFT ADJUST IF A ZERO
   .     C4356                LSH  AQ*6                                04355  07000 00006
   .     C4357                BSK  B3*4                                04356  71300 00004  LOOP TO LEFT ADJ
   .     C4360                JP   $-2                                 04357  61000 04355
   .     C4361                STR  A*W(HSPBUF+B4)                      04360  15034 04404
   .     C4362                BSK  B4*-1                               04361  71400 77776
   .     C4363 INCHAR2        EXIT                                     04362  61010 04335  GO TO CALLING ROUTINE
   .     C4364 PRINTLIN       RJP  U(PRLOG)                            04363  65020 63423  PRINT
   .     C4365                15   HSPBUF                              04364  00015 04404
   .     C4366                1    0                                   04365  00001 00000
   .     C4367                JP   $+1                                 04366  61000 04367  IF BUSY FRGET IT
   .     C4370                JP   INCHAR1-2                           04367  61000 04350
   .     C4371 HSPRNT         ENTRY                                    04370  61000 00000
   .     C4372                RJP  U(PRLOG)                            04371  65020 63423  CALL HIGH SPEED PRINT ROUTINE

   .     C4373                C    HSPBUF                              04372  00000 04404  UPPER = NO OF WORDS,LOWER = ST
                                                                                           ART ADDR.
   .     C4374                1    0                                   04373  00001 00000  FEED PAPER 1 LINE BEFORE PRINT

   .     C4375                NO-OP                                    04374  12000 00000
   .     C4376                ENT  Q*W(HSPQSTOR)                       04375  10030 04550  RESTORE SAVED REGISTERS
   .     C4377                ENT  B2*L(HSPB2STOR)                     04376  12210 04552
   .     C4400                ENT  B3*L(HSPB3STOR)                     04377  12310 04553
   .     C4401                ENT  B4*L(HSPB4STOR)                     04400  12410 04554
   .     C4402                EXIT                                     04401  61010 04370
   .     C4403 PRINTSW        C    0                                   04402  00000 00000
   .     C4404 SLOTSTOR       C    0                                   04403  00000 00000
   .     C4405 HSPBUF         RESERVE   1000                           04404  00000 00000
   .     C4406 HSPQSTOR       RESERVE   1                              04550  00000 00000
   .     C4407 HSPASTOR       RESERVE   1                              04551  00000 00000
   .     C4410 HSPB2STOR      RESERVE   1                              04552  00000 00000
   .     C4411 HSPB3STOR      RESERVE   1                              04553  00000 00000
   .     C4412 HSPB4STOR      RESERVE   1                              04554  00000 00000
   .     C4413 ERRCNT         RESERVE   1                              04555  00000 00000
   .     C4414 ERRBUFWD       RESERVE   1                              04556  00000 00000
   .     C4415 BINLMT         C    0                                   04557  00000 00000
   .     C4416 CONVERT        C    0                                   04560  00000 00000
   .     C4417 NUMOIG         C    0                                   04561  00000 00000
   .     C4420 INFS1          C    0                                   04562  00000 00000
   .     C4421 PLTS1          C    0                                   04563  00000 00000
   .     C4422 PLTS2          C    0                                   04564  00000 00000
   .     C4423 QSTORE         C    0                                   04565  00000 00000
   .     C4424 CFASTOR        C    0                                   04566  00000 00000
   .     C4425 CFQSTOR        C    0                                   04567  00000 00000
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CARDS	LI IO	LABEL	TA	STATEMENT		LOC	F JKB Y	NOTES
.	C4426	MCPASTOR	C	0		04570	00000 00000	
.	C4427	MCPQSTOR	C	0		04571	00000 00000	
.	C4430	INTASTOR	C	0		04572	00000 00000	
.	C4431	INTQSTOR	C	0		04573	00000 00000	
.	C4432	ACTIVITY	C	0		04574	00000 00000	
.	C4433	BUFSLCT	C	0		04575	00000 00000	
.	C4434	SPECTBLS	C	0		04576	00000 00000	
.	C4435	BUFIN	C	0		04577	00000 00000	
.	C4436	BUFFCOUNT	RESERVE	1		04600	00000 00000	
.	C4437	PPADDR	RESERVE	1		04601	00000 00000	
.	C4440	CODE	RESERVE	1		04602	00000 00000	
.	C4441	GAMMA	RESERVE	1		04603	00000 00000	
.	C4442	BETA	RESERVE	1		04604	00000 00000	
.	C4443	INTEGER	RESERVE	1		04605	00000 00000	
.	C4444	FRACTION	C	0		04606	00000 00000	
.	C4445	SIGN	RESERVE	1		04607	00000 00000	
.	C4446	NCINTS	RESERVE	1		04610	00000 00000	
.	C4447	EXPONENT	RESERVE	1		04611	00000 00000	
.	C445C	FFFRACTION	RESERVE	1		04612	00000 00000	
.	C4451	ICINTEGER	RESERVE	2		04613	00000 00000	
.	C4452	ICFRACTION	RESERVE	2		04615	00000 00000	
.	C4453	ICEXPONENT	RESERVE	1		04617	00000 00000	
.	C4454	EXPSIGN	RESERVE	1		04620	00000 00000	
.	C4455	RJPIN	RJP	INTIN		04621	65000 00234	
.	C4456	RJPOUT	RJP	INTOUT		04622	65000 00140	
.	C4457		RESERVE	800		04623	00000 00000	
.	C4460	BUFFER	RESERVE	3000		04743	00000 00000	
.	C4461	TTYBUF	RESERVE	3000		05417	00000 00000	
.	C4462	TTYTBL	C0	00		06073	00000 00000	NULL
.	C4463		33	12		06074	00033 00012	E
.	C4464		37	03		06075	00037 00003	LINE FEED
.	C4465		C2	06		06076	00002 00006	A
.	C4466		10	05		06077	00010 00005	SPACE
.	C4467		C4	30		06100	00004 00030	S
.	C4470		C3	16		06101	00003 00016	I
.	C4471		31	32		06102	00031 00032	U
.	C4472		16	04		06103	00016 00004	CARRIAGE RETURN
.	C4473		11	11		06104	00011 00011	O
.	C4474		C1	27		06105	00001 00027	R
.	C4475		15	17		06106	00015 00017	J
.	C4476		32	23		06107	00032 00023	N
.	C4477		24	13		06110	00024 00013	F
.	C45CC		C6	10		06111	00006 00010	C
.	C45C1		13	20		06112	00013 00020	K
.	C45C2		17	31		06113	00017 00031	T
.	C45C3		22	37		06114	00022 00037	Z
.	C45C4		34	21		06115	00034 00021	L
.	C45C5		14	34		06116	00014 00034	W
.	C45C6		30	15		06117	00030 00015	H
.	C45C7		26	36		06120	00026 00036	Y
.	C451C		27	25		06121	00027 00025	P
.	C4511		12	26		06122	00012 00026	Q
.	C4512		05	24		06123	00005 00024	O

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C4513			20	07	06124	00020		00007	B
.	C4514			07	14	06125	00007		00014	G
.	C4515			36	00	06126	00036		00000	UPPER CASE
.	C4516			23	22	06127	00023		00022	M
.	C4517			35	35	06130	00035		00035	X
.	C4520			25	33	06131	00025		00033	V
.	C4521			21	00	06132	00021		00000	LOWER CASE
.	C4522		TTYTBLL	22	00	06133	00022		00000	NULL
.	C4523			C3	63	06134	00003		00063	3
.	C4524			32	03	06135	00032		00003	LINE FEED
.	C4525			C0	41	06136	00000		00041	-
.	C4526			C0	05	06137	00000		00005	SPACE
.	C4527			C0	72	06140	00000		00072	-
.	C4530			C0	70	06141	00000		00070	8
.	C4531			11	67	06142	00011		00067	7
.	C4532			32	04	06143	00032		00004	CARRIAGE RETURN
.	C4533			17	47	06144	00017		00047	$
.	C4534			21	64	06145	00021		00064	4
.	C4535			16	77	06146	00016		00077	BELL
.	C4536			31	56	06147	00031		00056	,
.	C4537			15	55	06150	00015		00055	EXCLAMATION PT
.	C4540			14	53	06151	00014		00053	COLON
.	C4541			13	51	06152	00013		00051	(
.	C4542			26	65	06153	00026		00065	5
.	C4543			27	52	06154	00027		00052	QUOTE
.	C4544			23	40	06155	00023		00040	)
.	C4545			C1	62	06156	00001		00062	2
.	C4546			12	76	06157	00012		00076	=
.	C4547			20	66	06160	00020		00066	6
.	C4550			25	60	06161	00025		00060	0
.	C4551			C7	61	06162	00007		00061	1
.	C4552			C6	71	06163	00006		00071	9
.	C4553			30	54	06164	00030		00054	QUESTION MARK
.	C4554			C5	42	06165	00005		00042	+
.	C4555			36	00	06166	00036		00000	UPPER CASE
.	C4556			35	75	06167	00035		00075	.
.	C4557			34	74	06170	00034		00074	/
.	C4560			C0	73	06171	00000		00073	SEMI-COLON
.	C4561			13	00	06172	00013		00000	LOWER CASE
.	C4562		MCPINIT	ENTRY		06173	61000		00000	INTERNAL MCP
.	C4563		DRIVER	ENT	A•W(00042)	06174	11030		00042	
.	C4564			STR	A•W(TEMP1)	06175	15030		06217	
.	C4565			ENT	A•W(00062)	06176	11030		00062	
.	C4566			STR	A•W(TEMP2)	06177	15030		06220	
.	C4567			ENT	Q•12000	06200	10000		12000	
.	C4570			STR	Q•U(MCPSW)	06201	14020		06206	SET SWITCH TO NO-OP
.	C4571		MCP	RPT	77777	06202	70000		77777	
.	C4572			ENT	80•0	06203	12000		00000	KILL TIME
.	C4573			RJP	L(KYBRD)	06204	65010		00000	EXECUTE COMPROC
.	C4574			JP	MCP2	06205	61000		06212	ATTENTION RETURN
.	C4575		MCPSW	JP	MCP	06206	61000		06202	
.	C4576			ENT	Q•61000	06207	10000		61000	
.	C4577			STR	Q•U(MCPSW)	06210	14020		06206	SET SWITCH TO JUMP

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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/1/65

CARDS    L1 ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

    .    C46CC                EXIT                                    06211  61010 06173
    .    C46C1 MCP2           ENT  A•W(TEMP1)                         06212  11030 06217
    .    C46C2                STR  A•W(00042)                         06213  15030 00042
    .    C46C3                ENT  A•W(TEMP2)                         06214  11030 06220
    .    C46C4                STR  A•W(00062)                         06215  15030 00062
    .    C46C5                REX  TAKEOVER                           06216  64120 00141
    .    C46C6 TEMP1          C    0                                  06217  00000 000C0
    .    C46C7 TEMP2          0    0                                  06220  00000 0C0C0
    .    C4610                NO-OP                                   06221  12000 000C0  DUMMY
    .    C4611 FLTPT          PROGRAM   CORRB•16MAR64
    .    C4612                IGNORE    FLTPT
    .    C4613 PTR            MEANS     C4
    .    C4614 PCUT           MEANS     C4
    .    C4615 FLTPT          ENTRY                                   06222  61000 00000
    .    C4616                STR  B1•L(FP1)                          06223  16110 06231
    .    C4617                STR  B4•L(FP4)                          06224  16410 06232
    .    C4620                STR  B5•L(FP5)                          06225  16510 06233
    .    C4621                STR  B6•L(FP6)                          06226  16610 06234
    .    C4622                STR  B7•L(FP7)                          06227  16710 06235
    .    C4623                RJP  L(EFP+B7)                          06230  65017 06237
    .    C4624 FF1            ENT  B1•0                               06231  12100 000C0
    .    C4625 FF4            ENT  B4•0                               06232  12400 000C0
    .    C4626 FF5            ENT  B5•0                               06233  12500 000C0
    .    C4627 FP6            ENT  B6•0                               06234  12600 000C0
    .    C4630 FP7            ENT  B7•0                               06235  12700 000C0
    .    C4631                EXIT                                    06236  61010 06222
    .    C4632 EFP            C    A00                                06237  00000 06261  ADDITION
    .    C4633                0    SUB                                06240  00000 06320  SUBTRACTION    1
    .    C4634                C    MPL                                06241  00000 06330  MULTIPLICATION
    .    C4635                C    DIV                                06242  00000 06342  DIVISION
    .    C4636                C    STARTREAD                          06243  00000 07122  DATA INPUT
    .    C4637                C    PUNCH                              06244  C0000 06465  PUNCH OUTPUT
    .    C4640                C    TYPE                               06245  00000 06463  TYPE OUTPUT
    .    C4641                C    SET                                06246  00000 06426  SET OUTPUT LENGTH
    .    C4642                0    FXTOFL                             06247  00000 06430  FIX TO FLOA(
    .    C4643                0    FLTOFX                             06250  00000 06440  FLOAT TO FIX
    .    C4644                C    SQR                                06251  00000 06511  SQUARE ROOT
    .    C4645                C    SIN                                06252  00000 07535  SINE OF ARGUMENT
    .    C4646                C    COS                                06253  00000 07644  COS OF ARGUMENT
    .    C4647                0    ATAN                               06254  00000 066C3  ARCTANGENT OF ARGUMENT
    .    C4650                C    EXP                                06255  00000 06663  EXPONENTIAL OF ARGUMENT
    .    C4651                C    ASIN                               06256  00000 07125
    .    C4652                0    ACOS                               06257  00000 07331
    .    C4653                C    LOGE                               06260  00000 07354
    .    C4654 ACC            ENTRY                                   06261  61000 000C0
    .    C4655                ENT  A•L(B4)                            06262  11014 00000
    .    C4656                SUB  A•L(B5)•ANEG                       06263  21715 000C0  C1 MINUS C2
    .    C4657                JP   POS                                06264  61000 06277
    .    C4660                ENT  Q•L(B5)                            06265  10015 000C0  C2 IS THE
    .    C4661                STR  Q•W(B6)                            06266  14036 000C0  RESULTANT CHARACTERISTIC
    .    C4662                SEL  CP•X77777                          06267  51040 77777  C2 MINUS C1
    .    C4663                COM  A•35•YLESS                         06270  04600 00035  C2-C1 GREATER THAN 28
    .    C4664                STR  A•L(SFT1)•SKIP                     06271  15110 06310  NO
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CAROS	L1 IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C4665			JP MTR1	06272	61000 06315	YES
.	C4666			ENT A•W(1+B5)	06273	11035 00001	
.	C4667			STR A•W(WS)	06274	15030 06467	STORE LARGER MANTISSA
.	C4670			ENT A•W(1+B4)	06275	11034 00001	
.	C4671			JP SFT	06276	61000 063C7	
.	C4672	PCS		ENT Q•L(B4)	06277	10014 000C0	C1 IS THE RESULTANT
.	C4673			STR Q•W(B6)	06300	14036 000C0	CHARACTERISTIC
.	C4674			COM A•35•YLESS	06301	04600 00035	C1-C2 GREATER THAN 28
.	C4675			STR A•L(SFT1)•SKIP	06302	15110 06310	NO
.	C4676			JP MTR	06303	61000 06314	YES
.	C4677			ENT A•W(1+B4)	06304	11034 000C1	
.	C47C0			STR A•W(WS)	06305	15030 06467	STORE LARGER MANTISSA
.	C47C1			ENT A•W(1+B5)	06306	11035 00001	
.	C47C2	SFT		ENT Q•0	06307	10000 000C0	
.	C47C3	SFT1		RSH AQ•0	06310	03000 000C0	SET RADIX PUINTS
.	C47C4			ADD A•W(WS)	06311	20030 06467	ADD LARGER MANTISSA
.	C47C5			RJP SCL	06312	65000 06362	TO SCALE
.	C47C6			EXIT	06313	61010 06261	
.	C47C7	MTR		ENT A•W(1+B4)•SKIP	06314	11134 00001	M1 RESULTANT MANTISSA
.	C4710	MTR1		ENT A•W(1+B5)	06315	11035 000C1	M2 RESULTANT MANTISSA
.	C4711			STR A•W(1+B6)	06316	15036 00001	STORE RESULTANT
.	C4712			EXIT	06317	61010 06261	
.	C4713	SUB		ENTRY	06320	61000 000C0	
.	C4714			ENT A•L(B5)	06321	11015 000C0	
.	C4715			STR A•L(WS2)	06322	15010 06471	C2
.	C4716			ENT A•W(1+B5)	06323	11035 000C1	
.	C4717			STR A•CPW(WS3)	06324	15070 06472	COMPLEMENT M2
.	C4720			ENT B5•WS2	06325	12500 06471	SET B5
.	C4721			RJP ADD	06326	65000 06261	JUMP TO ADD ROUTINE
.	C4722			EXIT	06327	61010 06320	
.	C4723	MPL		ENTRY	06330	61000 00000	
.	C4724			ENT A•L(B4)	06331	11014 000C0	
.	C4725			ADD A•L(B5)	06332	20015 000C0	C1 + C2
.	C4726			SUB A•40000	06333	21000 40000	RESULTANT C
.	C4727			STR A•W(B6)	06334	15036 00000	
.	C4730			ENT Q•W(1+B4)	06335	10034 00001	
.	C4731			MUL W(1+B5)	06336	22035 00001	(M1)(M2)
.	C4732			LSH AQ•2	06337	07000 00002	SHIFT FOR SCALE
.	C4733			RJP SCL	06340	65000 06362	TO SCALE
.	C4734			EXIT	06341	61010 06330	
.	C4735	DIV		ENTRY	06342	61000 000C0	
.	C4736			ENT A•W(1+B5)•AZERO	06343	11435 00001	
.	C4737			ENT A•L(B4)•SKIP	06344	11114 00000	
.	C4740			JP ERR	06345	61000 07011	ZERO DIVISOR
.	C4741			SUB A•L(B5)	06346	21015 00000	C1-C2
.	C4742			ADD A•40000	06347	20000 400C0	RESULTANT C
.	C4743			STR A•L(B6)	06350	15016 00000	
.	C4744			ENT Q•0	06351	10000 000C0	
.	C4745			ENT A•W(1+B4)	06352	11034 00001	M1
.	C4746			RSH AQ•2	06353	03000 00002	PREPARE FOR DIVISION
.	C4747			DIV W(1+B5)	06354	23035 00001	M1 DIVIDED BY M2
.	C4750			STR Q•A•APOS	06355	14640 00000	QUOTIENT TO A. IS IT POS
.	C4751			ENT Q•X-0•SKIP	06356	10140 77777	NO SET NEG

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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C4752            CL   Q                                06357  10000 00000  YES SO SET TO PLUS ZERO
   .     C4753            RJP  SCL                              06360  65000 06362  TO SCALE
   .     C4754            EXIT                                  06361  61010 06342
   .     C4755 SCL        ENTRY                                 06362  61000 000C0
   .     C4756            JP   NEG•ANEG                         06363  60700 06375
   .     C4757            RPT  36                               06364  70000 00036
   .     C4760            LSH  AQ•1•ANEG                        06365  07700 00001
   .     C4761            JP   ZERO                             06366  61000 06417  RESULT ZERO
   .     C4762            SEL  CL•1                             06367  52000 00001
   .     C4763            ADD  A•2•APOS                         06370  20600 00002
   .     C4764            JP   AQR                              06371  61000 06404
   .     C4765            RPL  Y+1•W(B6)                        06372  36036 00000  ADD 1 TO C
   .     C4766            ENT  A•W(SCL2)                        06373  11030 06423  40000 00000 TO A
   .     C4767            JP   AQR                              06374  61000 06404
   .     C4770 NEG        RPT  36                               06375  70000 00036
   .     C4771            LSH  AQ•1•APOS                        06376  07600 00001
   .     C4772            JP   ZERO                             06377  61000 06417  RESULT ZERO
   .     C4773            SUB  A•2•ANEG                         06400  21700 00002
   .     C4774            JP   AQR                              06401  61000 06404  NO CHANGE
   .     C4775            RPL  Y+1•W(B6)                        06402  36036 00000
   .     C4776            ENT  A•W(SCL2+1)                      06403  11030 06424  37777 77777 TO A
   .     C4777 AQR        RSH  AQ•2                             06404  03000 00002  SET RADIX PT
   .     C5CC0            SEL  CP•W(SCL2+2)                     06405  51030 06425  SET FIRST TWO BITS  0
   .     C5CC1            STR  A•W(1+B6)                        06406  15036 00001  RESULTANT MANTISSA
   .     C5CC2            STR  B7•Q                             06407  16700 000C0  SHIFTS
   .     C5CC3            ADD  Q•W(B6)                          06410  26036 000C0  CR + SHIFTS
   .     C5CC4            SUB  Q•34•QNEG                        06411  27700 00034  CR + SHIFTS -28, SKIP IF Q NEG

   .     C5005            STR  Q•W(B6)•SKIP                     06412  14136 00000  STORE RESULTANT CHARACTERISTIC

   .     C5CC6            JP   ZERO                             06413  61000 06417  RESULT ZERO
   .     C5CC7            SUB  Q•77777•QPOS                     06414  27600 77777
   .     C5C10            EXIT                                  06415  61010 06362
   .     C5C11            JP   ERR                              06416  61000 07011  OVERFLOW
   .     C5C12 ZERO       STR  B0•W(B6)                         06417  16036 00000
   .     C5C13            STR  B0•W(1+B6)                       06420  16036 00001  RESULT IS ZERO
   .     C5C14            ENT  A•0                              06421  11000 00000
   .     C5C15 SCL1       EXIT                                  06422  61010 06362
   .     C5C16 SCL2       40000      00000                      06423  40000 00000
   .     C5C17            37777      77777                      06424  37777 77777
   .     C5C20            60000      00000                      06425  60000 00000
   .     C5C21 SET        ENTRY                                 06426  61000 00000
   .     C5C22            EXIT                                  06427  61010 06426
   .     C5C23 FXTOFL     ENTRY                                 06430  61000 000C0
   .     C5C24            ENT  Q•X(B4)                          06431  10044 00000  SCALING POINT TO Q
   .     C5C25            ENT  Y-Q•40034                        06432  31000 40034  40034-S
   .     C5C26            STR  A•W(B6)                          06433  15036 00000  CHARACTERISTIC
   .     C5C27            ENT  Q•0                              06434  10000 00000
   .     C5C30            ENT  A•W(B5)                          06435  11035 00000  FIX NO
   .     C5C31            RJP  SCL                              06436  65000 06362  SCALE
   .     C5C32            EXIT                                  06437  61010 06430
   .     C5C33 FLTOFX     ENTRY                                 06440  61000 00000
   .     C5C34            ENT  Q•X(B4)                          06441  10044 00000  SCALING PT WITH SIGN
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CARDS	LI ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C5C35			ADD Q•L(B5)	06442	26015	00000		CHARACTERISTIC
.	C5C36			SUB Q•40000	06443	27000	40000		
.	C5C37			ENT Y-Q•34•APOS	06444	31600	00034		
.	C5C40			JP FLTOFX2	06445	61000	06455		TO NEG BRANCH
.	C5C41			STR A•L(FLTOFX1)	06446	15010	06452		SETUP SHIFT
.	C5C42			SUB A•36•ANEG	06447	21700	00036		TEST FOR S GREATER THAN 29
.	C5C43			ENT A•0•SKIP	06450	11100	00000		CLEAR SHIFT GREATER THAN 30
.	C5C44			ENT A•W(1+B5)	06451	11035	00001		MANTISSA
.	C5C45	FLTOFX1		RSH A•0	06452	02000	00000		SHIFT
.	C5C46			STR A•W(B6)	06453	15036	00000		RESULTS
.	C5C47			EXIT	06454	61010	06440		
.	C5C50	FLTOFX2		COM A•X77776•YLESS	06455	04640	77776		
.	C5C51			JP ERR12	06456	61000	07031		LEFT SHIFT GREATER THAN 1
.	C5C52			ENT A•W(1+B5)	06457	11035	00001		MANTISSA
.	C5C53			LSH A•1	06460	06000	00001		SHIFT
.	C5C54			STR A•W(B6)	06461	15036	00000		RESULT
.	C5C55			EXIT	06462	61010	06440		
.	C5C56	TYPE		ENTRY	06463	61000	00000		
.	C5C57			EXIT	06464	61010	06463		
.	C5C60	PUNCH		ENTRY	06465	61000	00000		
.	C5C61			EXIT	06466	61010	06465		
.	C5C62	WS		C 0	06467	00000	00000		
.	C5C63	WS1		C 0	06470	00000	00000		
.	C5C64	WS2		C 0	06471	00000	00000		
.	C5C65	WS3		C 0	06472	00000	00000		
.	C5C66	WS4		C 0	06473	00000	00000		
.	C5C67	WS5		C 0	06474	00000	00000		
.	C5C70	WS6		C 0	06475	00000	00000		
.	C5C71	WS7		C 0	06476	00000	00000		
.	C5C72	WS10		C 0	06477	00000	00000		
.	C5C73	WS11		C 0	06500	00000	00000		
.	C5C74	WS12		C 0	06501	00000	00000		
.	C5C75	WS13		C 0	06502	00000	00000		
.	C5C76	WS14		C 0	06503	00000	00000		
.	C5C77	WS15		C 0	06504	00000	00000		
.	C51C0	WS16		C 0	06505	00000	00000		
.	C51C1	RZERC		STR B0•W(B6)	06506	16036	00000		
.	C51C2			STR B0•W(B6+1)	06507	16036	00001		
.	C51C3			JP FP4	06510	61000	06232		
.	C51C4	SCR		ENTRY	06511	61000	00000		
.	C51C5			ENT A•W(1+B4)•APOS	06512	11634	00001		IS MANTISSA POSITIVE
.	C51C6			JP ERR13	06513	61000	07033		NO ERROR EXIT
.	C51C7			ENT Q•W(SQR1)•ANOT	06514	10530	06562		MASK FOR 2 EXP(-2), 2 EXP(-3)
.	C5110			STR A•L(B6)•SKIP	06515	15116	00000		RESULT CHARACTERISTIC ZERO
.	C5111			STR LP•A•SKIP	06516	47140	00000		EXTRACT RANGE FACTOR, SCALED 2 5
.	C5112			STR A•W(1+B6)•SKIP	06517	15136	00001		RESULT MANTISSA ZERO
.	C5113			RSH A•25D•SKIP	06520	02100	00031		RANGE FACTOR SCALED 0
.	C5114			EXIT	06521	61010	06511		
.	C5115			ENT B5•A	06522	12570	00000		LOAD B5 WITH FACTOR
.	C5116			ENT Q•W(1+B4)	06523	10034	00001		M SCALED 28
.	C5117			MUL W(SQR2+B5)	06524	22035	06567		TIMES K SCALED 2

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CAROS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C5120               RSH  AQ•2                        06525  03000 000C2  M(1) SCALED 28
   .     C5121               STR  Q•W(WS)                     06526  14030 06467  SAVE M(1)
   .     C5122               RSH  Q•3                         06527  01000 000C3  T(MES 1/8
   .     C5123               ADD  Q•W(SQR1+1)                 06530  26030 06563  MINUS B
   .     C5124               MUL  W(WS)                       06531  22030 06467
   .     C5125               RSH  AQ•290                      06532  03000 00035  SCALED 27
   .     C5126               ADD  Q•W(SQR1+2)                 06533  26030 06564  MINUS C
   .     C5127               STR  Q•W(WS+1)                   06534  14030 06470  SAVE -A SCALED 27
   .     C5130               CL   Q                           06535  10000 000C0  SET UP
   .     C5131               ENT  A•W(WS)                     06536  11030 06467  M(1)
   .     C5132               RSH  AQ•4                        06537  03000 000C4  SCALED 54
   .     C5133               DIV  W(WS+1)                     06540  23030 06470  M(1)/(-A) SCALED 27
   .     C5134               ADD  Q•W(WS+1)                   06541  26030 06470  MINUS A
   .     C5135               STR  Q•W(WS)                     06542  14030 06467  SAVE -2(SQRT M(1)
   .     C5136               ENT  A•L(B4)                     06543  11014 000C0  CHARACTER(STIC
   .     C5137               ADD  A•W(SQR1+3)                 06544  20030 06565  PLUS BIAS
   .     C514C               LSH  A•290                       06545  06000 00035  HALVED
   .     C5141               STR  A•L(B6)•ANEG                06546  15716 000C0  TO RESULT CHECK EVEN/ODD
   .     C5142               MUL  W(SQR3+B5)•SK(P             06547  22135 06573  EVEN CHAR CORRECT(ON SCALED 29
   .     C5143               MUL  W(SQR4+B5)                  06550  22035 06577  ODD CHAR
   .     C5144               RSH  AQ•280                      06551  03000 00034  N SCALED 28
   .     C5145               COM  Q•W(SQR1+4)•YLESS            06552  04230 06566  IS N NORMALIZED
   .     C5146               JP   SQRT1                       06553  61000 06560  YES
   .     C5147               ENT  A•L(B6)                     06554  11016 000C0  ADD 1
   .     C5150               ADD  A•1                         06555  20000 000C1  TO
   .     C5151               STR  A•L(B6)                     06556  15016 000C0  CHAR.
   .     C5152               RSH  Q•1                         06557  01000 00001  NORMALIZE
   .     C5153 SQRT1         STR  Q•W(1+B6)                   06560  14036 00001  STORE RESULT
   .     C5154               EXIT                             06561  61010 06511
   .     C5155 SQR1          C60CCC0000                       06562  06000 00000  MASK
   .     C5156               6376776144                       06563  63767 76144  -B SCALED 28
   .     C5157               7500402153                       06564  75004 02153  -C SCALED 27
   .     C516C               C000C40000                       06565  00000 40000  BIAS
   .     C5161               2000C00000                       06566  20000 00000  1.0 SCALED 28
   .     C5162 SQR2          C000C00007                       06567  00000 000C7  K(3) FOR BITS 00
   .     C5163               0000C0006                        06570  00000 00006  K(2)          01
   .     C5164               CC00C00C05                       06571  00000 000C5  K(1)        10
   .     C5165               0000C00004                       06572  00000 00004  K(0)        11
   .     C5166 SQR3          6371733412                       06573  63717 33412  7 EXP(-1/2)+2•10 EXP(-9) SCALE
                                                                                  D 29
   .     C5167               6273720435                       06574  62737 20435  6 EXP(-1/2)
   .     C5170               6154066433                       06575  61540 66433  5 EXP(-1/2)
   .     C5171               5777777776                       06576  57777 77776  4 EXP(-1/2)
   .     C5172 SQR4          5671230431                       06577  56712 30431  (2/7) EXP(1/2)
   .     C5173               5541454270                       06600  55414 54270  (1/3) EXP(1/2)
   .     C5174               5360566233                       06601  53605 66233  (2/5) EXP(1/2)
   .     C5175               5127660627                       06602  51276 60627  (1/2) EXP(1/2)
   .     C5176 ATAN          ENTRY                            06603  61000 000C0
   .     C5177               ENT  Q•L(B4)                     06604  10014 0C0C0  C
   .     C52C0               COM  Q•40001•YMORE                06605  04300 40001  LESS THAN 40001
   .     C52C1               JP   ERR16                       06606  61000 07037  NO-ARGUMENT TOO LARGE
   .     C52C2               COM  Q•37745•YLESS                06607  04200 37745
   .     C52C3               JP   RZERO                       06610  61000 06506
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/1/65

CARDS    LI ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C52C4 ATAN1         CNT  A•40000                             06611  11000 40000
   .     C52C5               STR  A-Q•W(WS5)                          06612  33030 06474  TO A SET UP SHIFT
   .     C52C6               ENT  Q•W(1+B4)                           06613  10034 00001  MANTISSA
   .     C52C7               RSH  Q•A                                 06614  01070 00000  CONVERT TO FIXED POINT
   .     C5210               STR  Q•W(WS5)                            06615  14030 06474  M
   .     C5211               MUL  W(WS5)                              06616  22030 06474  M2
   .     C5212               RSH  AQ•33                               06617  03000 00033
   .     C5213               STR  Q•W(WS6)                            06620  14030 06475  M2
   .     C5214               ENT  B5•0                                06621  12500 00000
   .     C5215               ENT  Q•W(ATAN5)                          06622  10030 06655
   .     C5216 ATAN2         MUL  W(WS6)                              06623  22030 06475  HASTINGS CONSTANT
   .     C5217               RSH  AQ•35                               06624  03000 00035  TO Q
   .     C5220               ADD  Q•W(ATAN5+B5+1)                     06625  26035 06656
   .     C5221               BSK  B5•4                                06626  71500 00004
   .     C5222               JP   ATAN2                               06627  61000 06623
   .     C5223               MUL  W(WS5)                              06630  22030 06474  M
   .     C5224               RSH  AQ•34                               06631  03000 00034
   .     C5225               JP   ATAN3•QNEG                          06632  60300 06644
   .     C5226               RPT  36                                  06633  70000 00036  POS RESULT
   .     C5227               LSH  Q•1•QNEG                            06634  05300 00001
   .     C5230               JP   RZERO                               06635  61000 06506
   .     C5231               ENT  A•37743+B7                          06636  11007 37743
   .     C5232               STR  A•W(B6)                             06637  15036 00000  OF RESULT
   .     C5233               ENT  A•0                                 06640  11000 00000  CLEAR
   .     C5234               LSH  AQ•34                               06641  07000 00034
   .     C5235               STR  A•W(1+B6)                           06642  15036 00001  MANTISSA OF RESULT
   .     C5236               EXIT                                     06643  61010 06603
   .     C5237 ATAN3         RPT  36                                  06644  70000 00036  NEG RESULT
   .     C5240               LSH  Q•1•QPOS                            06645  05200 00001
   .     C5241               JP   RZERO                               06646  61000 06506
   .     C5242               ENT  A•37743+B7                          06647  11007 37743
   .     C5243               STR  A•W(B6)                             06650  15036 00000  OF RESULT
   .     C5244               ENT  A•3                                 06651  11000 00003  NEG SIGN
   .     C5245               LSH  AQ•34                               06652  07000 00034
   .     C5246               STR  A•W(1+B6)                           06653  15036 00001  MANTISSA FOR RESULT
   .     C5247               EXIT                                     06654  61010 06603
   .     C5250 ATAN5         77477      75334                         06655  77477 75334  K 11
   .     C5251               C1536      53004                         06656  01536 53004  K9
   .     C5252               74214      27222                         06657  74214 27222  K7
   .     C5253               06143      01016                         06660  06143 01016  K5
   .     C5254               65266      23005                         06661  65266 23005  K3
   .     C5255               37777      50120                         06662  37777 50120  K1
   .     C5256 EXP           ENTRY                                    06663  61000 00000
   .     C5257               ENT  Q•W(1+B4)•QPOS                      06664  10234 00001  MANTISSA
   .     C5260               JP   EXP2                                06665  61000 06700
   .     C5261               ENT  A•L(B4)                             06666  11014 00000  CHARACTERISTIC
   .     C5262               COM  A•40034•YMURE                       06667  04700 40034  C LESS THAN 40034
   .     C5263               JP   ERR17                               06670  61000 07044  NO-OVERFLOW
   .     C5264               COM  A•37744•YMORE                       06671  04700 37744  C LESS THAN 37744
   .     C5265               JP   EXP4                                06672  61000 06705  NO
   .     C5266 EXP1          ENT  A•40001                             06673  11000 40001
   .     C5267               STR  A•W(B6)                             06674  15036 00000  RESULT IS
   .     C5270               ENT  A•W(EXP10)                          06675  11030 06742  ONE
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                    ........................   SPURT OUTPUT NO. 210      ........................
                                NTERCOM              AOAMS-ASSOC•7/1/65

CARDS    L1 (O LABEL      TA STATEMENT                                  LOC    F JKB Y      NOTES

   .     C5271               STR  A•W(1+B6)                             06676  15036 00001
   .     C5272               EX(T                                       06677  61010 06663
   .     C5273 EXP2          ENT  A•L(B4)                               06700  11014 00000
   .     C5274               COM  A•40034•YMORE                         06701  04700 40034
   .     C5275               JP   RZERO                                 06702  61000 06506
   .     C5276 EXP3          COM  A•37744•YLESS                         06703  04600 37744  C LESS THAN 37744
   .     C5277               JP   EXP1                                  06704  61000 06673  YES
   .     C5300 EXP4          MUL  W(EXP10+1)                            06705  22030 06743  LOGE1/LN10
   .     C5301               STR  A•W(WS12)                             06706  15030 06501
   .     C5302               ENT  A•40032                               06707  11000 40032
   .     C5303               SUB  A•W(B4)                               06710  21034 00000  CHARACTER(STIC
   .     C5304               STR  A•W(WS13)                             06711  15030 06502  SET UP SH(FT
   .     C5305               ENT  A•W(WS12)                             06712  11030 06501
   .     C5306               RSH  AQ•W(WS13)•APOS                       06713  03630 06502  CONVERT TO FIXED POINT
   .     C5307               JP   EXP7                                  06714  61000 06737  NEG NUMBER
   .     C5310               ADD  A•40001                               06715  20000 40001
   .     C5311               STR  A•W(B6)                               06716  15036 00000
   .     C5312 EXP5          ENT  A•0                                   06717  11000 00000
   .     C5313               RSH  AQ•1                                  06720  03000 00001
   .     C5314               MUL  W(EXP10+2)                            06721  22030 06744
   .     C5315               RSH  AQ•35                                 06722  03000 00035
   .     C5316               STR  Q•W(WS14)                             06723  14030 06503
   .     C5317               ENT  B5•0                                  06724  12500 00000  CLEAR
   .     C5320               ENT  Q•W(EXP10+3)                          06725  10030 06745  K6
   .     C5321 EXP6          MUL  W(WS14)                               06726  22030 06503  K6X
   .     C5322               RSH  AQ•34                                 06727  03000 00034
   .     C5323               ADD  Q•W(EXP10+B5+4)                       06730  26035 06746
   .     C5324               BSK  B5•5                                  06731  71500 00005
   .     C5325               JP   EXP6                                  06732  61000 06726
   .     C5326               ENT  A•0                                   06733  11000 00000
   .     C5327               LSH  AQ•35                                 06734  07000 00035
   .     C5330               STR  A•W(1+B6)                             06735  15036 00001  RESULT
   .     C5331               EXIT                                       06736  61010 06663
   .     C5332 EXP7          ADD  A•40000                               06737  20000 40000
   .     C5333               STR  A•W(B6)                               06740  15036 00000
   .     C5334               JP   EXP5                                  06741  61000 06717
   .     C5335 EXP10         10000      0                               06742  10000 00000  MANTISSA OF 1
   .     C5336               27052      43542                           06743  27052 43542  LOGE1/LN10
   .     C5337               11504      04651                           06744  11504 04651  PROGRAM CONSTANT
   .     C5340               00056      24630                           06745  00056 24630  K
   .     C5341               00155      74340                           06746  00155 74340  K5
   .     C5342               01152      16565                           06747  01152 16565  K4
   .     C5343               04035      41132                           06750  04035 41132  K3
   .     C5344               12466      00553                           06751  12466 00553  K2
   .     C5345               22327      26210                           06752  22327 26210  K1
   .     C5346               20000      0                               06753  20000 00000  FIXED POINT 1
   .     C5347 AERR1         STR  A•L(AERR2+2)                          06754  15010 06776
   .     C5350               CONSOLE    HOLD                            06755  64120 00142
                                                                       06756  03000 00000
   .     C5351               TYPET      $CR$$LF$$LF$FP ERROR$CR$ADDR$S06757  61000 06764
                             P$$SP$
                                                                       06760  04030 31325
                                                                       06761  05122 72724
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/(/65

CARDS    L1 (O LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

                                                                     06762  27040 61111
                                                                     06763  27050 50000
                                                                     06764  64120 00142
                                                                     06765  00000 00022
                                                                     06766  00000 06760
    .    C5352                ENT  Q•L(FLTPT)                        06767  10010 06222
    .    C5353                SUB  Q•1                               06770  27000 00001
    .    C5354                TYPEC     Q•$SP$•$SP$•$SP$•$SP$        06771  64110 00141
                                                                     06772  00000 00000
                                                                     06773  77050 50505
    .    C5355 AERR2          TYPE 100•AERR2                         06774  64120 00142
                                                                     06775  00000 00012
                                                                     06776  00000 06774
    .    C5356                ENT  B4•L(FP4)                         06777  12410 06232
    .    C5357                ENT  B5•L(FP5)                         07000  12510 06233
    .    C5360                ENT  B6•L(FP6)                         07001  12610 06234
    .    C5361                ENT  B7•L(FP7)                         07002  12710 06235
    .    C5362                CL   A                                 07003  11000 00000
    .    C5363                CL   Q                                 07004  10000 00000
    .    C5364                CONSCLE   RELEASE                      07005  64120 00142
                                                                     07006  04000 00000
    .    C5365 FFSTCP         REX  STOPRUN                           07007  64120 00142
                                                                     07010  05000 00000
    .    C5366 ERR            ENT  B7•L(FP7)                         07011  12710 06235
    .    C5367                ENT  A•L(AERR+B7)                      07012  11017 07014
    .    C5370                JP   AERR1                             07013  61000 06754
    .    C5371 AERR           C    ADDFL                             07014  00000 07020
    .    C5372                C    SBCFL                             07015  00000 07022
    .    C5373                C    MLCFL                             07016  00000 07024
    .    C5374                C    DVOFL                             07017  00000 07026
    .    C5375 ACCFL          C611110524                             07020  06111 10524
    .    C5376                1321C50505                             07021  13210 50505
    .    C5377 SBCFL          3032C70524                             07022  30320 70524
    .    C54C0                1321C50505                             07023  13210 50505
    .    C54C1 MLCFL          2232210524                             07024  22322 10524
    .    C54C2                1321C50505                             07025  13210 50505
    .    C54C3 DVCFL          1116330524                             07026  11163 30524
    .    C54C4                1321C50505                             07027  13210 50505
    .    C54C5 ERR11          ENT  A•ERR20•SK(P                      07030  11100 07046
    .    C54C6 ERR12          ENT  A•ERR21                           07031  11000 07050
    .    C54C7                JP   AERR1                             07032  61000 06754
    .    C541C ERR13          ENT  A•ERR22•SK(P                      07033  11100 07052
    .    C5411 ERR14          ENT  A•ERR23                           07034  11000 07054
    .    C5412                JP   AERR1                             07035  61000 06754
    .    C5413 ERR15          ENT  A•ERR24•SK(P                      07036  11100 07056
    .    C5414 ERR16          ENT  A•ERR25                           07037  11000 07060
    .    C5415                JP   AERR1                             07040  61000 06754
    .    C5416 ERR16A         ENT  A•ERR40                           07041  11000 07066  LOG ERROR
    .    C5417                JP   AERR1                             07042  61000 06754
    .    C5420 ERR1C          ENT  A•ERR27•SK(P                      07043  11100 07064
    .    C5421 ERR17          ENT  A•ERR26                           07044  11000 07062
    .    C5422                JP   AERR1                             07045  61000 06754
    .    C5423 ERR2C          1621210530                             07046  16212 10530  ILL SET NO
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CARDS	LI IO	LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C5424			1231C52324	07047	12310 52324	
.	C5425	ERR21		3010C62112	07050	30100 62112	SCALE OFL
.	C5426			0524132105	07051	05241 32105	
.	C5427	ERR22		3026270523	07052	30262 70523	
.	C5430			1214C52324	07053	12140 52324	
.	C5431	ERR23		3016230524	07054	30162 30524	
.	C5432			1321C50505	07055	13210 50505	
.	C5433	ERR24		10243 00524	07056	10243 00524	
.	C5434			1321050505	07057	13210 50505	
.	C5435	ERR25		C631C62305	07060	06310 62305	
.	C5436			2413210505	07061	24132 10505	
.	C5437	ERR26		1235250524	07062	12352 50524	
.	C5440			1321C50505	07063	13210 50505	
.	C5441	ERR27		2432312532	07064	24323 12532	
.	C5442			3105241321	07065	31052 41321	
.	C5443	ERR4C		2124141205	07066	21241 41205	
.	C5444			1227272427	07067	12272 72427	
.	C5445	LERR		STR A•L(LERR+3)	07070	15010 07073	
.	C5446			RPL Y+1•L(POW14)	07071	36010 07124	
.	C5447			STR A•L(FLTPT)	07072	15010 06222	
.	C5450			ENT A•0	07073	11000 00000	
.	C5451			JP AERR1	07074	61000 06754	
.	C5452	ERR2		ENT A•ERR30•SKIP	07075	11100 07106	
.	C5453	ERR3		ENT A•ERR31	07076	11000 07110	
.	C5454			JP LERR	07077	61000 07070	
.	C5455	ERR4		ENT A•ERR32•SKIP	07100	11100 07112	
.	C5456	ERR5		ENT A•ERR33	07101	11000 07114	
.	C5457			JP LERR	07102	61000 07070	
.	C5460	ERR6		ENT A•ERR34•SKIP	07103	11100 07116	
.	C5461	ERR7		ENT A•ERR35	07104	11000 07120	
.	C5462			JP LERR	07105	61000 07070	
.	C5463	ERR3C		2324310524	07106	23243 10524	
.	C5464			1031C50505	07107	10310 50505	
.	C5465	ERR31		2324C53106	07110	23240 53106	NO TAB
.	C5466			0705C50505	07111	07050 50505	
.	C5467	ERR32		2324310511	07112	23243 10511	NOT DEC
.	C5470			1210C50505	07113	12100 50505	
.	C5471	ERR33		2324C51112	07114	23240 51112	NO DEC PT
.	C5472			1005253105	07115	10052 53105	
.	C5473	ERR34		2706231412	07116	27062 31412	RANGE ERR
.	C5474			C512272705	07117	05122 72705	
.	C5475	ERR35		1223110510	07120	12231 10510	END CODE
.	C5476			2411120505	07121	24111 20505	
.	C5477	STARTREAD		ENTRY	07122	61000 00000	
.	C55C0			EXIT	07123	61010 07122	
.	C55C1	PCW14		NO-OP	07124	12000 00000	
.	C55C2	ASIN		ENTRY	07125	61000 00000	
.	C5503			ENT A•40001	07126	11000 40001	BIASED CHAR EQUALS 1
.	C55C4			SUB A•L(B4)•APOS	07127	21614 00000	1-C, TEST C GREATER THAN 1
.	C5505			JP ERR16	07130	61000 07037	YES ERROR
.	C55C6			ENT B5•A	07131	12570 00000	B5 EQUALS 1-C TEST C EQUALS 1
.	C55C7			JP ASIN4•AZERO	07132	60400 07274	

CARDS	LI ID LABEL	TA	STATEMENT	LOC	F JKB Y	NOTES
.	C5510	SUB	A•1•ANOT	07133	21500 00001	-C TEST C EQUALS 0
.	C5511	JP	ASIN3	07134	61000 07215	YES TO TEST ABS(M) EQUALS 1/2
.	C5512	COM	A•140•YMORE	07135	04700 00016	
.	C5513	ENT	A•C•SKIP	07136	11100 00000	
.	C5514 HERE	ENT	A•W(1+84)•SKIP	07137	11134 00001	
.	C5515	JP	ASIN2	07140	61000 07211	
.	C5516	LSH	A•1	07141	06000 00001	SCALED 29
.	C5517	STR	A•W(WS)	07142	15030 06467	SAVED
.	C552C	RSH	AQ•29D+85	07143	03005 00035	M•2••C EQUALS Y SCALED 29 EQUALS X
.	C5521	STR	Q•W(WS+1)	07144	14030 06470	
.	C5522	MUL	W(WS+1)	07145	22030 06470	
.	C5523	RSH	AQ•29D	07146	03000 00035	SCALED 29 0 IN A
.	C5524 ASIN1	STR	A•W(WS+1)	07147	15030 06470	STORE P
.	C5525	MUL	W(ASINK)	07150	22030 07313	K•X••2
.	C5526	RSH	AQ•29D	07151	03000 00035	SCALED 29 EQUALS Z
.	C5527	ENT	Y+Q•W(ASINK+3)	07152	30030 07316	Z+C
.	C5530	STR	A•W(WS+2)	07153	15030 06471	SAVED
.	C5531	ENT	A•W(ASINK+1)	07154	11030 07314	A
.	C5532	STR	A+Q•Q	07155	32000 00000	+Z
.	C5533	MUL	A	07156	22070 00000	(A+Z)••2
.	C5534	RSH	AQ•29D	07157	03000 00035	SCALED 29
.	C5535	ADD	Q•W(ASINK+2)	07160	26030 07315	+B EQUALS U
.	C5536	STR	Q•W(WS+3)	07161	14030 06472	SAVE U
.	C5537	MUL	W(WS+2)	07162	22030 06471	U•(Z+C)
.	C5540	RSH	AQ•29D	07163	03000 00035	SCALED 29 EQUALS V
.	C5541	ENT	Y+Q•W(ASINK+4)	07164	30030 07317	V+D
.	C5542	SUB	Q•W(WS+3)	07165	27030 06472	V-D
.	C5543	ADD	Q•W(ASINK+5)	07166	26030 07320	+E
.	C5544	STR	A•W(WS+3)	07167	15030 06472	
.	C5545	MUL	W(WS+3)	07170	22030 06472	
.	C5546	RSH	AQ•29D	07171	03000 00035	SCALED 29
.	C5547	ADD	C•W(ASINK+6)	07172	26030 07321	+F EQUALS ARCSIN X/2X
.	C5550	MUL	W(WS)	07173	22030 06467	•M EQUALS (1/2)ARCSIN X SCALED 28+C
.	C5551	RSH	AQ•27D+85	07174	03005 00033	•(4•2••C) EQUALS 2ARCSIN X SC 28
.	C5552	ENT	A•W(WS+1)•AZERO	07175	11430 06470	P SCALED 28 SKIP IF P EQUALS 0
.	C5553	STR	A+C•Q•SKIP	07176	32100 00000	P-2•ARCSIN X EQUALS ARCSIN Y
.	C5554	RSH	C•1	07177	01000 00001	ARCSIN Y SCALED 28
.	C5555	STR	Q•A•QPOS	07200	14240 00000	TEST M LESS THAN 0
.	C5556	STR	A•A	07201	15040 00000	YES FORM ABS(M)
.	C5557	RPT	29D	07202	70000 00035	NORMALIZE
.	C556C	LSH	A•1•ANEG	07203	06700 00001	SCALED 30
.	C5561	JP	ASIN2+2	07204	61000 07213	M EQUALS 0
.	C5562	LSH	A•29D	07205	06000 00035	PRESERVE SIGN
.	C5563	RSH	A•1•QPOS	07206	02200 00001	M SCALED 28 TEST M LESS THAN 0
.	C5564	STR	A•A	07207	15040 00000	YES -ABS(M)
.	C5565	ENT	Q•37745+87•SKIP	07210	10107 37745	C EQUALS (27-SF)-27+BIAS
.	C5566 ASIN2	ENT	Q•A	07211	10070 00000	C EQUALS 0
.	C5567	STR	Q•L(86)	07212	14016 00000	STORE ARCSIN Y

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.........................   SPURT OUTPUT NO. 210   .........................
                    NTERCOM          AOAMS-ASSOC*7/(/65

CARDS   L1 (O LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .    C557C               STR  A*W(1+B6)                     07213  15036 000C1  AS C,M
   .    C5571               EX(T                               07214  61010 07125
   .    C5572 AS(N3         ENT  Q*W(1+B4)                     072(5  10034 0000(  M EQUALS Y SCALEO 28
   .    C5573               STR  Q*A*QNEG                      07216  (4340 000C0  FORM
   .    C5574               STR  A*A                           07217  15040 000C0  -ABS(Y)
   .    C5575               ADD  A*W(AS(NP+2)*ANOT             07220  20530 07324  1/2-ABS(Y) TEST ZERO
   .    C5576               JP   AS(N5                         07221  61000 073C3  YES USE (PI)/6
   .    C5577               ADD  A*W(AS(NP+2)*QPOS             07222  20230 07324  (1-ABS(Y))/2 SCALEO 29
   .    C56CC               STR  A*CPW(WS+()*SK(P              07223  15170 06470  STORE X**2 ANO
   .    C56C1               STR  A*W(WS+1)                     07224  15030 06470  SAVE S(GN OF Y
   .    C56C2               RPT  29C*                          07225  70000 00035  NORMAL(ZE
   .    C56C3               LSH  A*1*ANEG                      07226  06700 000C1  SCALEO 30
   .    C56C4               JP   AS(N5-1                       07227  61000 07302  ABS(X) LESS THAN 2**-13 USE (P
                                                                                   ()/2
   .    C56C5               ENT  Q*A                           07230  10070 00000  SAVE X**2
   .    C56C6               STR  B7*A                          07231  16740 00000  26-SF
   .    C56C7               SUB  A*300                         07232  21000 0C036  -(2+SF) EQUALS -(2-2C)
   .    C56(0               LSH  A*290*ANEG                    07233  06700 00035  -(1-C) TEST SF EVEN
   .    C5611               LSH  Q*270*SK(P                    07234  05100 00033  NO (1/4)*X**2 SCALED 29EQUALS
                                                                                   T/2
   .    C56(2               LSH  Q*280                         07235  05000 00034  YES (1/2)*X**2 SCALEO 29 EQUAL
                                                                                   S T/2
   .    C56(3               STR  A*A                           07236  15040 00CC0  1-C
   .    C5614               ENT  B5*A                          07237  12570 00000  TO B5
   .    C56(5               STR  Q*W(WS+2)                     07240  14030 06471  SAVE T/2
   .    C56(6               MUL  W(AS(NQ)                      0724(  22030 07326  A(T/2)
   .    C56(7               RSH  AQ*290                        07242  03000 00035  SCALEO 29
   .    C5620               ADD  Q*W(AS(NQ+1)                  07243  26030 07327  +(B/2)
   .    C562(               MUL  W(WS+2)                       07244  22030 06471  *(T/2)
   .    C5622               RSH  AQ*290                        07245  03000 00035  SCALEO 29 O 1N A-REG
   .    C5623               ADD  Q*W(AS(NQ+2)                  07246  26030 07330  +(C/4)
   .    C5624               STR  Q*W(WS)                       07247  14030 06467   EQUALS (T**1/2)/4 APPROX EQUA
                                                                                   LS R1
   .    C5625               ENT  Q*W(WS+2)                     07250  10030 06471  T/2
   .    C5626               LSH  AQ*260                        07251  07000 00032  *(1/8) EQUALS T/16 SCALEO 58
   .    C5627               D(V  W(WS)                         07252  23030 06467  (T/16)/R1
   .    C5630               ADD  Q*W(WS)                       07253  26030 06467  +R1
   .    C5631               RSH  Q*1                           07254  01000 00001  *(1/2) EQUALS R2
   .    C5632               STR  Q*W(WS)                       07255  14030 06467  SAVE R2
   .    C5633               ENT  A*W(WS+2)                     07256  11030 06471  ONE MORE
   .    C5634               CL   Q                             07257  10000 000C0  (TERAT1ON
   .    C5635               RSH  AQ*4                          07260  03000 00004  Y(ELOS
   .    C5636               D(V  W(WS)                         07261  23030 06467  (T**1/2)/2
   .    C5637               ADD  Q*W(WS)                       07262  26030 06467  *2
   .    C5640               LSH  AQ*310                        07263  07000 00037   EQUALS T**1/2 SCALEO 29 EQUAL
                                                                                   S ABS(M)
   .    C5641               ENT  Q*W(WS+()*QNEG                07264  10330 06470  X**2 TEST SIGN
   .    C5642               STR  A*CPW(WS)*SK(P                07265  15170 06467  STORE -M
   .    C5643               STR  A*W(WS)                       07266  15030 06467  STORE -M
   .    C5644               ENT  A*W(ASINP+()*QPOS             07267  11230 07323  (P()/2 SCALEO 28
   .    C5645               STR  Q*Q*SK(P                      07270  14100 00000  CHANGE SIGN
   .    C5646               JP   AS(N1                         07271  61000 07147  TO CALC FOR Y GREATER .5
   .    C5647               STR  A*A                           07272  15040 000C0  -(P()/2
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CARDS	L1 (O	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C5650			JP AS(N1	07273	61000		07147	TO CALC FOR Y LESS THAN -.5
.	C5651	AS(N4		ENT Q•W(1+B4)	07274	10034		00001	M
.	C5652			STR Q•A•QNEG	07275	14340		00000	FORM
.	C5653			STR A•A	07276	15040		00CC0	-ABS(M)
.	C5654			BOO A•W(AS(NP+2)•AZERO	07277	20430		07324	+(1/2) TEST AZERO
.	C5655			JP ERR16	07300	61000		07037	NO ERROR
.	C5656			ENT B5•40001	07301	12500		40001	C FOR (PI)/2
.	C5657			JP AS(N5+1	07302	61000		073C4	
.	C5660	AS(N5		ENT B5•40000	07303	12500		40000	C FOR (PI)/6
.	C5661			ENT A•W(AS(NP-40000+B5)•QPOS	07304	11235		47321	(PI)/6ORIP()/2 TEST M LESS
.	C5662			STR A•A	07305	15040		00000	YES -(PI)/6 OR -(P()/2
.	C5663			RSH A•1	07306	02000		00001	M SCALED 28
.	C5664			STR B5•Q	07307	16500		0C0C0	C
.	C5665			STR Q•L(B6)	07310	14016		0C0C0	STORE ARCSIN Y
.	C5666			STR A•W(1+B6)	07311	15036		00001	AS C,M
.	C5667			EXIT	07312	61010		07125	
.	C5670	AS(NK		2041C15167	07313	20410		15167	K
.	C5671			(070502075	07314	10705		02075	A
.	C5672			1507662270	07315	15076		62270	B
.	C5673			C125170245	07316	01251		70245	C
.	C5674			C151206634	07317	01512		06634	D
.	C5675			3121124150	07320	31211		24150	E
.	C5676			1720500666	07321	17205		00666	F
.	C5677	AS(NP		2060251072	07322	20602		51072	(PI)/6 SCALED 29
.	C57CC			3110375526	07323	31103		75526	(P()/2 SCALED 28
.	C57C1			1000C00000	07324	10000		00CC0	1/2 SCALED 28
.	C57C2			1444176653	07325	14441		76653	(PI)/2 SCALED 27
.	C57C3	AS(NQ		6570132340	07326	65701		32340	-A SCALED 29
.	C57C4			2065211354	07327	20652		11354	B/2 SCALED 29
.	C57C5			C2046G0545	07330	02046		00545	C/4 SCALED 29
.	C57C6	ACCS		ENTRY	07331	61000		00000	
.	C57C7			RJP AS(N	07332	65000		07125	GET ARCS(N Y
.	C5710			ENT A•40001	07333	11000		400C1	BIASED CHARACTERISTIC
.	C5711			SUB A•L(B6)	07334	21016		000C0	1-C
.	C5712			ENT Q•W(1+B6)	07335	10036		00001	M SCALED 28
.	C5713			RSH Q•A	07336	01070		000C0	ARCSIN Y SCALED 27
.	C5714			SUB Q•W(AS(NP+3)•QNEG	07337	27730		07325	-(P()/2 SCALED 27
.	C5715			JP ACOS1	07340	61000		07350	ARCOS Y EQUALS 0
.	C5716			RPT 290	07341	70000		00035	NORMALIZE (-ARCOS Y)
.	C5717			LSH Q•1•QPOS	07342	05200		000C1	WITH 26+C IN B7
.	C5720			JP ACOS1	07343	61000		07350	(ARCOS Y EQUALS 0)
.	C5721			LSH Q•290	07344	05000		00035	SAVE SIGN OF -M
.	C5722			RSH Q•1	07345	01000		00001	AND SCALE 28
.	C5723			STR B7•A	07346	16740		000C0	26+C
.	C5724			BOO A•37746•SKIP	07347	20100		37746	+BIAS-26 EQUALS C
.	C5725	ACCS1		STR Q•Q	07350	14000		000C0	SET FOR C EQUALS 0
.	C5726			STR A•L(B6)	07351	15016		00000	STORE ARCOS Y
.	C5727			STR Q•CPW(1+B6)	07352	14076		00001	AS C,M
.	C573C			EXIT	07353	61010		07331	
.	C5731	LCGE		ENTRY	07354	61000		00000	LN(Y) IN FLOATING PT
.	C5732			ENT Q•W(1+B4)	07355	10034		00001	MANTISSAEQMEQQ
.	C5733			COM Q•W(LOGER)•YMORE	07356	0433C		07465	TEST M LESS1

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CARDS    LI (D LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C5734              JP   ERR16A                         07357  61000 07041
   .     C5735              ENT  Y-Q•W(LOGER+1)•ANEG            07360  31730 07466  TEST M GREATER 1/2
   .     C5736              JP   LOGE1                          07361  61000 07410  NO,TRY M EQ 1/2
   .     C5737              ENT  LP•W(LOGER+2)                  U7362  40030 07467  GET (
   .     C574C              RSH  A•240                          07363  02000 00030  FOR K(1)
   .     C574(              ENT  B5•A                           07364  12570 00000  IN TABLE
   .     C5742              MUL  W(LOGEK+B5)                    07365  22035 07507  K(1)•Q
   .     C5743              RSH  AQ•290                         07366  03000 00035  SCALEO 27
   .     C5744              SUB  Q•W(LOGER+1)                   07367  27030 07466  -1 EQ X
   .     C5745              ENT  Y+Q•W(LOGEA+2)                 07370  30030 07473  X+C
   .     C5746              STR  A•W(WS)                        07371  15030 06467  SAVEO
   .     C5747              ENT  Y+Q•W(LOGEA)                   07372  30030 07471  X+A
   .     C575D              STR  A•W(WS+1)                      07373  15030 06470
   .     C5751              MUL  W(WS+1)                        07374  22030 06470
   .     C5752              RSH  AQ•270                         07375  03000 00033  SCALEO 27
   .     C5753              STR  Q•W(WS+1)                      07376  14030 06470  SAVEO
   .     C5754              ADD  Q•W(LOGEA+1)                   07377  26030 07472  Z+B
   .     C5755              MUL  W(WS)                          07400  22030 06467  •(X+C)
   .     C5756              RSH  AQ•270                         07401  03000 00033  SCALEO 27 EQ W
   .     C5757              ENT  Y+Q•W(LOGEA+4)                 07402  30030 07475  W+E
   .     C576D              ADD  Q•W(LOGER+3)                   07403  26030 07470  W-3
   .     C5761              ADD  Q•W(LOGEA+3)                   07404  26030 07474  +(0+3)
   .     C5762              ADD  Q•W(WS+()                      07405  26030 06470  +Z
   .     C5763              STR  A•W(WS+()                      U7406  15030 06470
   .     C5764              MUL  W(WS+()•SK(P                   07407  22130 06470
   .     C5765 LOGE1        ENT  Q•W(LOGEA+5)•SKIP              07410  10130 07476  LN(2)
   .     C5766              DIV  W(LOGER+3)•SK(P                07411  23130 07470  (-1/6) EQLN(X)-F•(-1/6)
   .     C5767              STR  Q•Q•SK(P                       07412  14100 00000  -LN(2)
   .     C5770              ADD  Q•W(LOGEF+B5)•SK(P             07413  26135 07477  +F•(-1/L)-LN(K(()))
   .     C577(              JP   ERR16A•ANOT                    07414  60500 07041
   .     C5772              STR  Q•W(WS)                        07415  14030 06467  EQ LN(Q) SCALEO28
   .     C5773              ENT  A•L(B4)                        07416  11014 00000  CHAR EQ P+2••14
   .     C5774              SUB  A•40000•ANOT                   07417  21500 40000  -B(ASEQP,TEST P EQO
   .     C5775              JP   LOGE2                          07420  61000 07445  YES SKIP CALC
   .     C5776              ENT  Q•A•QPOS                       07421  10270 00000  TEST PLESSO
   .     C5777              STR  Q•Q                            07422  14000 00000  USE ABS(P)
   .     C6CC0              RPT  4•AOV                          07423  70100 00004  RANGE OF P
   .     C6CC(              COM  Q•L(LOGES)•YMORE               07424  04310 07517  TO OETR M(N SHIFTS
   .     C6CC2              JP   LOGEM                          07425  61000 07523
   .     C6CC3              ENT  B5•U(LOGES+B7)                 07426  12527 07517  FOR SCALING
   .     C6CC4 LOGE1A       MUL  W(LOGEA+5)                     07427  22030 07476
   .     C6CC5              LSH  AQ•B5                          07430  07005 00000  SCALEO 45 47 50 53 56
   .     C6CC6              JP   LOGEM+2                        07431  61000 07525
   .     C6CC7              RPT  L(COUNT)                       07432  70010 07534  NORMAL(ZE
   .     C6CID              LSH  AQ•1•ANEG                      07433  07700 00001  PRODUCT
   .     C6C11              JP   ERR16A                         07434  61000 07041
   .     C6C12              LSH  AQ•58D                         07435  07000 00072  RETURN S(GN SCALEO 28
   .     C6C13              ENT  Q•L(B4)                        07436  10014 00000  P
   .     C6C14              COM  Q•40000•YLESS                  U7437  04200 40000  TEST P LESS 0
   .     C6C15              STR  A•A                            07440  15040 00000  YES -ABS(P)•LN(2)
   .     C6C16              ENT  Q•W(WS)                        07441  10030 06467  LN(Q)
   .     C6C17              ENT  B5•B7-260                      07442  12507 77745
   .     C6C20              BJP  B5•LOGE2-1                     07443  72500 07444
```

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C6C21				RSH Q•85•SKIP	07444	01105	00000		
.	C6C22		LOGE2		ENT B7•270	07445	12700	00033		SET FOR NO SHIFTS(P EQ 0)
.	C6C23				STR A•Q•Q•QPOS	07446	32200	00000		LN(Y)
.	C6C24				STR Q•Q	07447	14000	00000		ABS(LN(Y))
.	C6C25				JP LOGE3•AZERO	07450	60400	07461		SKIP IF Y EQ 1
.	C6C26				STR B7•W(WS)	07451	16730	06467		SAVE FACTOR
.	C6C27				RPT 29D	07452	70000	00035		NORMALIZE
.	C6C30				LSH Q•1•QNEG	07453	05300	00001		ABS(LN(Y))
.	C6C31				JP ERR16A	07454	61000	07041		
.	C6C32				LSH Q•28D•APOS	07455	05600	00034		RETURN SIGN SCALED 28
.	C6C33				STR Q•Q	07456	14000	00000		AS MANTISSA
.	C6C34				ENT A•W(WS)	07457	11030	06467		FORM
.	C6C35				ADD A•37712+B7•SKIP	07460	20107	37712		CHARACTER(STIC
.	C6C36		LOGE3		CL Q	07461	10000	00000		
.	C6C37				STR A•L(B6)	07462	15016	00000		STORE
.	C6C40				STR Q•W(1+B6)	07463	14036	00001		RESULT
.	C6C41				EXIT	07464	61010	07354		
.	C6C42		LOGER		2000C00000	07465	20000	00000		1SCALED 28
.	C6C43				1000C00000	07466	10000	00000		1/2SCALED28
.	C6C44				C70CC00000	07467	07000	00000		MASK FOR I
.	C6C45				4777777777	07470	47777	77777		-3 SCALED 27 -6 SCALED26
.	C6C46		LOGEA		5770232732	07471	57702	32732		A SCALED 27
.	C6C47				3427564132	07472	34275	64132		B
.	C6C50				C724376530	07473	07243	76530		C
.	C6C51				4341324241	07474	43413	24241		D+3
.	C6C52				5712656427	07475	57126	56427		E
.	C6C53				1305620600	07476	13056	20600		LN(2) SCALED 28
.	C6C54		LOGEF		5366557053	07477	53665	57053		
.	C6C55				5557247242	07500	55572	47242		I
.	C6C56				5733156444	07501	57331	56444		2
.	C6C57				6074650576	07502	60746	50576		3
.	C6C60				6225723447	07503	62257	23447		4
.	C6C61				6347732466	07504	63477	32466		5
.	C6C62				6463606732	07505	64636	06732		6
.	C6C63				6572323037	07506	65723	23037		7
.	C6C64		LOGEK		3600000000	07507	36000	00000		I EQ 0 IN K(I) EQ15/(8+I) SCALED 28
.	C6C65				3252525253	07510	32525	25253		1
.	C6C66				3000CC0C00	07511	30000	00CC0		2
.	C6C67				2564272135	07512	25642	72135		3
.	C6C70				2400C00000	07513	24000	00000		4
.	C6071				2235423542	07514	22354	23542		5
.	C6C72				2111111111	07515	21111	11111		6
.	C6C73				2000C00000	07516	20000	00000		7
.	C6C74		LOGES		C002300014	07517	00023	00014		UPPER HALF
.	C6C75				C002600135	07520	00026	00135		SHIFT CONSTANTS
.	C6076				C003101343	07521	00031	01343		LOWER HALF
.	C6077				C003413426	07522	00034	13426		CHAR RANGE
.	C61C0		LOGEM		ENT B5•170	07523	12500	00021		
.	C61C1				JP LOGE1A	07524	61000	07427		
.	C61C2				STR A•W(SAVE)	07525	15030	07533		
.	C61C3				ENT A•590	07526	11000	00073		
.	C61C4				SUB A•B5	07527	21005	00000		

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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C61C5            STR  A•W(COUNT)                       07530  15030 07534
   .     C61C6            ENT  A•W(SAVE)                        07531  11030 07533
   .     C61C7            JP   LOGE1A+3                         07532  61000 07432
   .     C6110 SAVE       RESERVE   1                           07533  00000 00000
   .     C6111 COUNT      RESERVE   1                           07534  00000 00000
   .     C6112 SIN        ENTRY                                 07535  61000 00000
   .     C6113            ENT  A•L(B4)                          07536  11014 00000
   .     C6114            COM  A•37767•YMORE                    07537  04700 37767  TEST EXPONENT LES 2EXP-10
   .     C6115            JP   $+5                              07540  61000 07545  NO
   .     C6116            STR  A•L(B6)                          07541  15016 00000  SET SIN(X) EQ X
   .     C6117            ENT  A•W(B4+1)                        07542  11034 00001
   .     C6120            STR  A•W(B6+1)                        07543  15036 00001
   .     C6121            EXIT                                  07544  61010 07535
   .     C6122            COM  A•40034•YMORE                    07545  04700 40034
   .     C6123            JP   $•STOP                           07546  61400 07546  EXPONENT GEQ 2EXP27
   .     C6124            CL   L(SINCOS2+1)                     07547  16010 07562
   .     C6125            ENT  A•W(1+B4)                        07550  11034 00001
   .     C6126 SINCOS1    STR  A•W(SINCOS20)•APOS               07551  15630 07642  ARG IN SINCOS20
   .     C6127            CP   A•ANOT                           07552  15540 00000
   .     C6130            JP   SINCOS7+1•AZERO                  07553  60400 07630
   .     C6131            ENT  Q•40033                          07554  10000 40033
   .     C6132            SUB  Q•L(B4)                          07555  27014 00000
   .     C6133            STR  Q•L(SINCOS2)                     07556  14010 07561
   .     C6134            ENT  Q•A                              07557  10070 00000  $ARG$ TO Q
   .     C6135            MUL  W(SINCOS10)                      07560  22030 07633  $ARG$ TIMES 2/PI IN AQ
   .     C6136 SINCOS2    RSH  AQ•0                             07561  03000 00000  QTREV IN AQ AT B30
   .     C6137            ADD  A•0                              07562  20000 00000  ADD 1 IF COSINE
   .     C6140            SEL  CL•X77774                        07563  52040 77774
   .     C6141            ENT  B7•A                             07564  12770 00000  QUADRANT TO B7
   .     C6142            RSH  AQ•1                             07565  03000 00001  FRAC IN Q AT B29
   .     C6143            JP   $+1+B7                           07566  61007 07567
   .     C6144            JP   $+3                              07567  61000 07572  QUADRANT I
   .     C6145            CP   Q•SKIP                           07570  14100 00000  QUADRANT II
   .     C6146            CP   Q                                07571  14000 00000  QUADRANT III
   .     C6147            ENT  A•W(SINCOS20)•APOS               07572  11630 07642  QUADRANT IV, ARG TO A
   .     C6150            CP   Q                                07573  14000 00000  -FRAC IF ARG NEGATIVE
   .     C6151            STR  Q•W(SINCOS20)                    07574  14030 07642  STORE X EQ + OR - FRAC AT B29

   .     C6152            MUL  W(SINCOS20)                      07575  22030 07642  Y EQ X••2 IN AQ AT B58
   .     C6153            RSH  AQ•290                           07576  03000 00035  Y IN Q AT B29
   .     C6154            STR  Q•W(SINCOS20+1)                  07577  14030 07643
   .     C6155            ENT  B7•3                             07600  12700 00003
   .     C6156            ENT  Q•W(SINCOS11+4)                  07601  10030 07641  KSUB9 IN Q AT B32
   .     C6157            MUL  W(SINCOS20+1)                    07602  22030 07643  Y TIMES POLY
   .     C6160            ENT  Q•A                              07603  10070 00000  TO Q
   .     C6161            ADD  Q•W(SINCOS11+B7)                 07604  26037 07635  POLY EQ POLY+KSUB1
   .     C6162            BJP  B7•$-3                           07605  72700 07602
   .     C6163            MUL  W(SINCOS20)                      07606  22030 07642  X•POLY IN AQ AT B57
   .     C6164            JP   SINCOS6•ANEG                     07607  60700 07615
   .     C6165            CL   L(SINCOS6+6)                     07610  16010 07623
   .     C6166            RPT  320                              07611  70000 00040
   .     C6167            LSH  AQ•1•ANEG                        07612  07700 00001
   .     C6170            JP   SINCOS7                          07613  61000 07627  SIN(X) EQ 0
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                    ........................   SPURT OUTPUT NO. 210   ........................
                                NTERCOM              ADAMS-ASSOC•7/1/65

CARDS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

    .    C6171                JP   $+5                                07614  61000 07621
    .    C6172 SINCOS6        CL   CPL($+6)                           07615  16050 07623
    .    C6173                RPT  32C                                07616  70000 00040
    .    C6174                LSH  AQ•1•APOS                          07617  07600 000C1
    .    C6175                JP   SINCOS7                            07620  61000 07627  SIN(X) EQ 0
    .    C6176                ENT  Q•37743+B7                         07621  10007 37743
    .    C6177                STR  Q•W(B6)                            07622  14036 000C0
    .    C62C0                ENT  Q•0                                07623  10000 000C0  PUT PROPER SIGN IN Q
    .    C62C1                LSH  AQ•580                             07624  07000 00072  SIN(X) IN A
    .    C62C2                STR  A•W(1+B6)                          07625  15036 000C1
    .    C62C3                EXIT                                    07626  61010 07535
    .    C62C4 SINCCS7        CL   A                                  07627  11000 00000  SIN(X) EQ 0
    .    C62C5                CL   W(B6)                              07630  16036 000C0
    .    C62C6                CL   W(1+B6)                            07631  16036 000C1
    .    C62C7                EXIT                                    07632  61010 07535
    .    C6210 SINCCS1C       2427630155                              07633  24276 30155  2/PI AT B29
    .    C6211                1000C00000                              07634  10000 000C0  I.0 AT B27
    .    C6212 SINCOS11       3110375522                              07635  31103 75522  K1 AT B28
    .    C6213                5325C41750                              07636  53250 41750  K3 AT B29
    .    C6214                C506321276                              07637  05063 21276  K5 AT B30
    .    C6215                7731554634                              07640  77315 54634  K7 AT B31
    .    C6216                0002366574                              07641  00023 66574  K9 AT B32
    .    C6217 SINCCS2C       C                                       07642  00000 00000  X HERE AT B29
    .    C6220                C                                       07643  00000 000C0  Y EQ X••2 AT B29
    .    C6221 CCS            ENTRY                                   07644  61000 000C0
    .    C6222                ENT  Q•L(COS)                           07645  10010 07644
    .    C6223                STR  Q•L(SIN)                           07646  14010 07535  SET EXIT ADDRESS
    .    C6224                ENT  A•L(B4)                            07647  11014 000C0
    .    C6225                COM  A•37764•YLESS                      07650  04600 37764  TEST EXPONENT GTR 2EXP-13
    .    C6226                JP   SINCOS8                            07651  61000 07663  NO, SET COS(X) EQ 1.0
    .    C6227                COM  A•40034•YMORE                      07652  04700 40034  TEST EXPONENT TOO LARGE
    .    C6230                JP   $•STOP                             07653  61400 07653  YES
    .    C6231                ENT  A•I                                07654  11000 00001
    .    C6232                STR  A•L(SINCOS2+1)                     07655  15010 07562
    .    C6233                ENT  A•W(1+B4)•APOS                     07656  11634 00001
    .    C6234                CP   A•AZERO                            07657  15440 00000  $ARG$ IN A
    .    C6235                JP   SINCOS1•ANOT                       07660  60500 07551
    .    C6236                ENT  Q•A                                07661  10070 000C0
    .    C6237                JP   SINCOS1                            07662  61000 07551
    .    C6240 SINCCS8        ENT  A•40001                            07663  11000 40001  COS(X) EQ 1.0
    .    C6241                STR  A•W(B6)                            07664  15036 00000
    .    C6242                ENT  A•W(SINCOS10+1)                    07665  11030 07634
    .    C6243                STR  A•W(B6+I)                          07666  15036 00001
    .    C6244                EXIT                                    07667  61010 07644

END CF LISTING
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..... SPURT OUTPUT NO. 211 .....

NTERCOM AOAMS-ASSOC*7/1/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
A$$$$$1111	06764	A$$$$$1112	06760	ACOS	07331
ACOS1	07350	ACCPT1	04231	ACQAZIM	63071
ACCELEV	63075	ACQUI	63427	ACTIVITY	04574
ACTUALTIME	63142	ADDFL	07020	ADD	06261
ACSCN	63416	AERR	07014	AERR1	06754
AERR2	C6774	AESCN	63417	ALNGOFFSET	63517
AGR	C6404	ARCOFAZIM	63524	ARCOFDEC	63526
ARCOFELEV	63522	ARCOFRA	63530	ASIN	07125
ASIN1	07147	ASIN2	07211	ASIN3	07215
ASIN4	07274	ASIN5	07303	ASINK	07313
ASINP	C7322	ASINQ	07326	ASTRODEC	63106
ASTRORA	63105	ATAN	06603	ATAN1	06611
ATAN2	06623	ATAN3	06644	ATAN5	06655
ATTEN	C4215	ATTNBIT	00001	ATTNBUF	00544
ATTNWDLC	C0077	ATTNWDUC	00057	AUPEREQUAT	63341
AZFLOTIME	63532	AZELBXSCAN	63500	AZIM	63053
AZIMOFFSET	63512	AZIMOUT	64000	AZIMOVER	63325
AZIMADD	63442	AZIMIN	75000	AZMTHSCAN	63501
BCOYSIZE	63462	BOTOK	00605	BOTATN	00602
BCTCR	C0570	BOTDEL	00552	BOTSTOP	00617
BETA	C4604	BINOCTFLO	02573	BINOCTFLO1	02576
BINCCTFLO2	02577	BINDECFRA	02703	BINDECFRA1	02713
BINDECFRA2	02714	BINDECINT	02514	BINDECINT1	02525
BINCECINT2	02526	BINDECINT3	02542	BINLMT	04557
BITS	03076	BLASTOFF	63146	BUFOUTWD	00537
BUFFCOUNT	04600	BUFFER	04743	BUFFSTORE	02506
BUFIN	C4577	BUFINWD	00540	BUFLMT	00453
BUFSLOT	04575	COCON	63414	COOE	04602
CCFFI	03253	COFFIX	03240	COFFTEM1	03271
CCFFTEM2	03272	COFRND	02763	COFRND1	02774
CCFRND1C	03062	COFRND11	03065	COFRNO2	02776
CCFRND3	C3C00	COFRND4	03007	COFRND41	03012
CCFRND5	03015	COFRND51	03025	COFRNO52	03032
CCFRND6	03035	COFRND7	03040	COFRND8	03044
CCFRND81	03053	COFRND9	03056	COMPROC	00004
CCMPROCCO	C0350	COMPROCO1	00444	COMPROCO2	00451
COMPROCC3	C0460	COMPROCO4	00475	COMPROCO6	00442
COMPROCC7	00432	COMPROCOB	00407	COMPROCO9	00373
CCMPROCSW	C0422	CONVERT	04560	CONVERTIME	63135
CCRCT	63420	COS	07644	COSORIENT	63065
CCSAZEL	63C70	COT1	03467	COT11	03500
CCT2	03510	COT3	03513	COT4	03523
CCT5	C3526	COT6	03535	COT7	03546
CCTFLT	03441	COTNEG1	03604	COTNEG11	03616
CCTNEG2	03626	COTNEG3	03631	COTNEG4	03641
CCTNEG5	03647	COTXT	03577	COUNT	07534
CASESET	C0730	CAZIM	63060	CELBODY	63113
CELCOMPGM	63424	CELEV	63061	CELTIME	63133
CHARO	02175	CHCOR	63422	CHPAR	63431
CINF1	03106	CINF21	03134	CINF3	03175
CINF30	C3155	CINFCALL	03201	CINFERR1	03233

NTERCOM ADAMS-ASSDC•7/1/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
CINFERR2	03234	CINFERR3	03235	CINF1X	03100
CINFLT	03275	CINFMSK	03232	CINFSTRP	03110
CINFTP3	03212	CINFXT	03231	CINFXT1	03225
CNFLNDN	03351	CNFLNDNO1	03355	CNFLNDN1	03365
CNFLNDN2	03375	CNFLT	03345	CNFLTO1	03402
CNFLTO11	03406	CNFLT11	03413	CNFLT12	03417
CNFLT3	03422	CNFLTERR1	03431	CNFLTP1	03432
CNFLTP2	03433	CNFLTP3	03435	CNFLTP4	03436
CNFLTP5	03437	CNFLTP6	03440	CNFLTPSIN	03434
CNFLTXT	03424	CPASTOR	04566	CPB6STOR	00131
CPBSTOR	00130	CPQSTOR	04567	CROUT	00546
CRANGE	63057	CRBUF	00541	CRBUF1N	00550
CRCOMP	00622	CRSSOFFSET	63516	CRSW	04162
CRWORD	00004	DOPPOUT	66000	DOPPADO	63444
DATANALYZE	63425	DAY	63150	DEC	63003
DECOFFSET	63515	DECDOT	63010	DECIN	01127
DECLO1	01643	DECLO2	01651	DECLINSCAN	63505
DECLMT	01634	DELBIT	00002	DELBUF	00543
DELTATEE	63316	DIV	06342	DRIVER	06174
DSECONDS	63141	DUMSEC TTG	63154	DVOFL	07026
DYOMP	63421	EFP	06237	ELEV	63054
ELEVOFFSET	63513	ELEVOUT	65000	ELEVADD	63443
ELEVIN	76000	ELVINSCAN	63502	EQUATOR	63323
ERR	07011	ERROR	03746	ERROR1	03757
ERROR1A	03763	ERROR2	03767	ERROR2A	04005
ERROR2B	04011	ERROR4	04013	ERROR4A	04014
ERROR5	04024	ERROR51	04037	ERROR52	04040
ERROR53	04052	ERROR5A	04045	ERROR5B	04046
ERROR5C	04061	ERROR5D	04063	ERROR5E	04054
ERROR6	04066	ERROR6A	04077	ERROR6B	04100
ERROR6C	04101	ERRORSW	04064	ERR10	07043
ERR11	07030	ERR12	07031	ERR13	07033
ERR14	07034	ERR15	07036	ERR16	07037
ERR16A	07041	ERR17	07044	ERR2	07075
ERR20	07046	ERR21	07050	ERR22	07052
ERR23	07054	ERR24	07056	ERR25	07060
ERR26	07062	ERR27	07064	ERR3	07076
ERR30	07106	ERR31	07110	ERR32	07112
ERR33	07114	ERR34	07116	ERR35	07120
ERR4	07100	ERR40	07066	ERR5	07101
ERR6	07103	ERR7	07104	ERRBUFWO	04556
ERRCNT	04555	ERRMESSFIN	04300	ESTSHIFTED	63143
EXP	06663	EXPONENT	04611	EXP1	06673
EXP10	06742	EXP2	06700	EXP3	06703
EXP4	06705	EXP5	06717	EXP6	06726
EXP7	06737	EXPNAME	63350	EXPSIGN	04620
FCBUFCNT	00726	FIRSTELEV	63104	FIRSTHRU	63153
FIXIN	01330	FIXIN1	01335	FIXIN2	01336
FIXLO1	01677	FIXLO15	01706	FIXLO2	01710
FIXLMT	01670	FLOATIN	01321	FLOATIN1	01325
FLATTENING	63337	FLTO3	01726	FLTOFX	06440

NTERCOM ADAMS-ASSDC•7/1/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
FLTCFX1	06452	FLTOFX2	06455	FLTLO1	01721
FLTLO2	01731	FLTLOLMT1	01760	FLTLOLMT2	01777
FLTLOLMT3	01771	FLTLMT	01712	FLTNUMEL	02023
FLTNUMFU	02020	FLTNUMGX	02026	FLTNUMLMT	01751
FLTPT	06222	FLTSTR	01617	FLTUP1	02005
FLTUP2	02016	FLTUPLMT	02001	FP1	06231
FP4	06232	FP5	06233	FP6	06234
FP7	06235	FPFRACTION	04612	FPSTOP	07007
FRABCDBIN	02641	FRABCDBIN1	02650	FRABCDBIN2	02677
FRABCDBIN3	02701	FRABCDBIN4	02702	FRACTION	04606
FRAMESIZE	63101	FREQUENCY	63317	FSHIFT	00033
FX1	01366	FX2	01404	FXB4STOR	01412
FXB5STOR	01413	FXCODE	03274	FXCR	01415
FXCR1	01420	FXCR2	01425	FXCR3	01423
FXCR4	01430	FXCRF7	01434	FXDIG	01453
FXDIG1	01454	FXDIG2	01457	FXDIGF	01471
FXDIGF1	01500	FXDIGI	01504	FXE	01520
FXF1	01524	FXE2	01522	FXERR	01412
FXPER	01443	FXPER1	01445	FXPER2	01447
FXPREPEN	01341	FXSIGN	01536	FXSIGN1	01540
FXSIGN2	01547	FXSIGN3	01551	FXTOFL	06430
GAMMA	04603	GEDCENLAT	63322	GEODETLAT	63321
GMTMDOU24	63145	GMTSHIFTED	63144	GREO1	02227
GREEKCONV	02203	HOCIIN	01140	HOCTLO1	01662
HOCTLO2	01666	HOCTLMT	01653	HOKBUF	00547
HOLDNOHOLD	63511	HOURMINUTE	63137	HOURREG	63151
HEIGHI	63326	HERE	07137	HIBIT	03071
HSPOUT	04115	HSPOUT1	04166	HSPOUTFIN	04152
HSPACC	04216	HSPASTOR	04551	HSPATTN	04204
HSPB2STOR	04552	HSPB3STOR	04553	HSPB4STOR	04554
HSPBUF	04404	HSPEM1	04265	HSPERRMESS	04252
HSPGIN	04172	HSPIN	04306	HSPIN1	04324
HSPIN2	04333	HSPNOT1	04237	HSPNOTACC	04233
HSPOSTOR	04550	HSPRNT	04370	IDEXPONENT	04617
ICFRACTION	04615	IOINTEGER	04613	IO10RADIO	66777
IC11RADIO	67776	IO12RADIO	67777	ID13RADIO	70775
IC14RADIO	70776	IO15RADIO	71776	IO16RADIO	71777
IC17RADIO	72776	ID18RADIO	72777	ID19RADIO	73776
IC1CELCOR	63000	IO1ENTPNT	63410	IO1RADCOR	63050
IC1RADID	63440	IO1RECRO	63210	ID1SYSENT	77576
IC1SYSNAM	77676	IO1SYSPAR	63310	IO1TIME	63130
IO2CRADIC	73777	ID21RADIO	74776	IO22RADIO	74777
IC23RADID	75776	IO24RADIO	75777	IO25RADIO	76775
IC26RADIO	76776	IO2CELCOR	63001	IO2ENTPNT	63411
IC2RADCOR	63051	IO2RADIO	63441	ID2RECRD	63211
ID2SYSENT	77577	IO2SYSNAM	77677	IO2SYSPAR	63311
IC2TIME	63131	IO3RADIO	63776	IO4RADIO	63777
IC5RADID	64776	IO6RADIO	64777	IO7RADIO	65776
IC8RADIC	65777	IO9RADIO	66776	INAZIMADD	63446
INB5STOR	00765	INCOOMAX	00010	INCOOTBL	01014
INCCMP	00010	INCHAR	04335	INCHAR1	04352

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LABEL	LOC	LABEL	LOC	LABEL	LOC
INCHAR2	04362	INCHAR3	04341	INELEVADO	63447
INERRX	00764	INFOO	00751	INFO1	00753
INFC2	00761	INFO3	00767	INFO31	00776
INFC4	01001	INFO5	01005	INFO6	01006
INFC7	01010	INFO8	01012	INFORMINT	00734
INFS1	04562	INPUTA	01047	INPUTA1	01053
INPUTA1A	01063	INPUTA2	01065	INPUTA3	01071
INPUTA5	01075	INPUTLA	01077	INPUTLA1	01104
INPUTLA3	01106	INPUTMA	01117	INPUTMA1	01124
INPUTMA3	01126	INPUTNA	01107	INPUTNA1	01114
INPUTNA3	01116	INTOCTBIN	02543	INTOCTBIN1	02547
INTOCTBIN2	02550	INTOCTBIN3	02566	INTOCTBIN4	02567
INTOCTBIN5	02572	INTOUT	00140	INTOUTO1	00147
INTOUTO2	00153	INTOUTO3	00160	INTOUTO35	00164
INTOUTO4	00170	INTOUTO5	00173	INTOUTSW	00143
INTOUTSWO	00142	INTASTOR	04572	INTBCOBIN	02607
INTBCOBIN1	02614	INTBCOBIN2	02615	INTBCOBIN3	02634
INTBCOBIN5	02640	INTBSTOR	00321	INTCOMO1	00043
INTCOMO2	00106	INTCOMO3	00110	INTCOMO4	00057
INTEGER	04605	INTER	63413	INTERAZIM	72000
INTERCOM	63426	INTERDOPP	74000	INTERELEV	73000
INTERLCKSW	63460	INTERRANGE	76777	INTEXIT	00120
INTIN	00234	INTINO1	00272	INTINO2	00315
INTINO29	00323	INTINO3	00325	INTINO35	00327
INTINO4	00332	INTINO5	00335	INTINSW	00312
INTGSTOR	04573	KILLOUT1	00257	KILLOUT2	00340
KILLOUT3	00343	KILLOUTSW	00240	KMPERNM	63342
KYBRD	00000	KYBRDLEVEL	63110	LOCOUTINT	00062
LOCININT	00042	LOCTTYOUT	00060	LOCTTYIN	00040
LOGE	07354	LOGE1	07410	LOGE1A	07427
LOGE2	07445	LOGE3	07461	LOGEA	07471
LOGEF	07477	LOGEK	07507	LOGEM	07523
LOGER	07465	LOGES	07517	LONGITUDE	63320
LOCHAR	04122	LERR	07070	LFBUF	00542
LFBUFIN	00551	LFIN	00600	LIMIT	04104
LIN2	04117	LINSW	04145	LMTCOMP	00623
LMTCHK	01036	LMTSTR1	02030	LMTSTR2	02044
LMTSTR3	02057	LSHIFT	00037	LSPERAU	63336
M6L	03074	MAINSWITCH	63334	MCP	06202
MCP2	06212	MCPASTOR	04570	MCPB6STOR	00455
MCPB7STOR	00456	MCPFILLER	71000	MCPGM	63412
MCPINIT	06173	MCPQSTOR	04571	MCPSW	06206
MILLSTNADD	63451	MINREG	63152	MINUS	00041
MLOFL	07024	MPL	06330	MSFREQ	63332
MTEN1	03660	MTEN10	03676	MTEN11	03700
MTEN12	03702	MTEN2	03662	MTEN24	03704
MTEN3	03664	MTEN36	03706	MTEN4	03666
MTEN5	03670	MTEN50	03710	MTEN6	03672
MTEN7	03674	MTR	06314	MTR1	06315
NCINTS	04610	NOLMT	01630	NOTACC1	04247
NEG	06375	NIL	00000	NMPERAU	63340

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LABEL	LOC	LABEL	LOC	LABEL	LOC
NTERCOM	00002	NUMOO	01160	NUMO1	01171
NUMO2	01175	NUMO3	01220	NUMO4	01230
NUMO5	01232	NUMO6	01243	NUMO7	01245
NUMO8	01236	NUMOIG	04561	NUMERR	01241
NUMIN	01151	NUMLMT	01733	NUMLMTO1	01744
NUMSTR	01560	POLE	63324	POS	06277
POWI4	07124	PERIODAZIM	63523	PERIOOOEC	63525
PERIODELEV	63521	PERIODRA	63527	PLOTP	63436
PLANP	63434	PLUS	00042	PPA	02273
PPAO	02277	PPA1	02306	PPA2	02316
PPA3	02317	PPA4	02330	PPAOOR	04601
PPB	02352	PPBO	02356	PPB1	02364
PPB3	02372	PPB4	02374	PPB4STOR	02502
PPB5	02375	PPB5STOR	02503	PPB6	02406
PPB6STOR	02504	PPC	02407	PPCO	02422
PPCCO	02417	PPC1	02426	PPO	02436
PPOI	02444	PPO2	02445	PPE	02455
PPE1	02460	PPE2	02463	PPE3	02472
PPERREXIT	02473	PPFINAL	02476	PREVIOUSTM	63461
PRINTLIN	04363	PRINTSW	04402	PRLOG	63423
PRPARAM	04157	PUNCH	06465	PUTO1	02075
PUTC2	02101	PUTO25	02107	PUTO3	02114
PUTC4	02122	PUTO5	02126	PUTO6	02136
PUTC7	02145	PUTO71	02155	PUTOB	02164
PUTCOOMAX	00004	PUTCOOTBL	02176	PUTCOMP	00004
PUTERRX	02112	PUTFORMINT	02072	PUTLM	00012
PUTPREP	02235	PUTS1	04563	PUTS2	04564
QMWORO	00054	QSTORE	04565	ROTATEAEBX	63507
ROTATERADN	63506	ROTATEROBX	63510	RA	63002
RAOFFSET	63514	RAOOT	63007	RAOARMOOE	63312
RADCBXSCAN	63503	RAOECO TIME	63531	RAOIOOEC	63541
RADIOMETER	63102	RAOIORA	63540	RAOIUS	63006
RADIUSOOT	63011	RANGE	63052	RANGEOUT	70777
RANGEAOC	63445	RANGEOOT	63062	RASCINSCAN	63504
RCMIR	63430	RDXXX	63433	RECOROSIZE	63112
RECAZIM	67000	RECELEV	70000	RECFILE	63212
RECRO	63415	RECROSWTCH	63155	RELEASESW	63156
RJPOUT	04622	RJPIN	04621	RJPTTYIN	00725
RZERO	06506	SAVE	07533	SAZIM	63055
SBOFL	07022	SCELTIME	63134	SCL	06362
SCLI	06422	SCL2	06423	SOEC	63005
SECONDS	63140	SELEV	63056	SET	06426
SEVENTYONE	03075	SFT	06307	SFT1	06310
SIDERTIME	63012	SIGN	04607	SIN	07535
SINORIENT	63064	SINAZEL	63066	SINCOS1	07551
SINCOS10	07633	SINCOS11	07635	SINCOS2	07561
SINCOS20	07642	SINCOS6	07615	SINCOS7	07627
SINCOS8	07663	SINTEMP	03657	SIXTIES	01557
SIXTY	03072	SIXTYFIVE	03073	SKIP	63331
SLOTSTOR	04403	SPACE	00005	SPACEO1	00535
SPACERITE	00524	SPACES	03077	SPECO1	01254

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LABEL	LOC	LABEL	LOC	LABEL	LOC
SPECO2	01271	SPECO3	01270	SPECERR	00000
SPECIN	01247	SPECTBLS	04576	SPECWO	00076
SQR	06511	SQR1	06562	SQR2	06567
SQR3	06573	SQR4	06577	SQRT1	06560
SRA	63004	SRADTIME	63136	STOPBUF	00545
STORE	01036	STARTREAD	07122	STRB5STOR	01615
STRING	01567	STRINGO1	01575	STRINGO2	01577
STRINGO3	01603	STRINGO4	01607	STRINGO5	01612
SUB	06320	SUPBSTOR	02761	SUPZRO	02726
SUPZRO1	02736	SUPZRO2	02737	SUPZRO3	02747
SUPZRO4	02754	SUPZRO5	02760	SYNCTIMING	63542
SYSCOMREG1	63452	SYSCOMREG2	63453	SYSCOMREG3	63454
SYSCOMREG4	63455	SYSCOMREG5	63456	SYSCOMREG6	63457
SYSENTRIES	77600	SYSNAMES	77700	SYSTAT1	63313
SYSTAT2	63314	SYSTATO	63315	TOPATN	00604
TOPCR	00576	TOPDEL	00576	TOPSTOP	00621
TEMP1	06217	TEMP2	06220	TEN	03712
TEN1	03714	TEN10	03732	TEN11	03734
TEN12	03736	TEN2	03716	TEN24	03740
TEN3	03720	TEN36	03742	TEN4	03722
TEN5	03724	TEN50	03744	TEN6	03726
TEN7	03730	TEST	01025	TIMECORR	63107
TIMEMODE	63103	TIMEP	63435	TIMETOHOLO	63520
TRUERANGE	63063	TRUETIME	63132	TTYOUTWO	00727
TTYASTOR	00230	TTYBSTOR	00216	TTYBUF	05417
TTYIN1	00211	TTYIN2	00220	TTYIN3	00221
TTYIN4	00214	TTYINTNT	00176	TTYINWO	00232
TTYCSTOR	00231	TTYSTATUS	63111	TTYTBL	06073
TTYTBLL	06133	TWOSECDOP	63017	TXYBUF	00227
TYPE	06463	VELOFLIGHT	63335	VIZOEC1	63014
VIZDEC2	63016	VIZRA1	63013	VIZRA2	63015
WESTOUT	00630	WESTOUTBF	00733	WESTOUTWO	00676
WESTASTOR	00731	WESTB4STOR	00677	WESTB5STOR	00700
WESTB6STOR	00701	WESTB7STOR	00702	WESTCONV	00656
WESTCHAR	00652	WESTIN	00624	WESTLRCS	00715
WESTQSTCR	00732	WESTUPCS	00706	WFORO	63432
WFADO	63450	WFFREQ	63333	WS	06467
WS1	06470	WS10	06477	WS11	06500
WS12	06501	WS13	06502	WS14	06503
WS15	06504	WS16	06505	WS2	06471
WS3	06472	WS4	06473	WS5	06474
WS6	06475	WS7	06476	YEARMONTH	63147
YESOO	01275	YESO1	01307	YESO2	01312
YESO3	01315	YESIN	01273	YRTRAN	63327
ZERO	06417	ZROSUPINT	02421	ZRTRAN	63330

END OF LISTING

..... SPURT OUTPUT NO. 212 .....

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LABEL	LOC	LABEL	LOC	LABEL	LOC
SPECERR	COCOU	NIL	00000	KYBRO	00000
ATTNBIT	COCO1	NTERCOM	00002	OELBIT	00002
PUTCOMP	00C04	PUTCOOMAX	00004	CRWORO	00004
CCMPROC	COCO4	SPACE	00005	INCOMP	00010
INCODMAX	00010	PUTLM	00012	FSHIFT	00033
LSHIFT	C0037	LOCTTYIN	00040	MINUS	00041
PLUS	00042	LOCININT	00042	INTCOMO1	00043
CMWCRD	00054	INTCOM04	00057	ATTNWOUC	00057
LCCTTYOUT	00060	LOCOUTINT	00062	SPECWO	00076
ATTNWDLC	00077	INTCOM02	00106	INTCOM03	00110
INTEXIT	00120	CPBSTOR	00130	CPB6STOR	00131
INTOUT	00140	INTOUTSWO	00142	INTOUTSW	00143
INTOUTO1	00147	INTOUTO2	00153	INTOUTO3	00160
INTOUTO35	00164	INTOUTO4	00170	INTOUTO5	00173
TTYININT	00176	TTYIN1	00211	TTYIN4	00214
TTYBSTOR	00216	TTYIN2	00220	TTYIN3	00221
TXYBUF	00227	TTYASTOR	00230	TTYQSTOR	00231
TTYINWO	C0232	INTIN	00234	KILLOUTSW	00240
KILLOUT1	00257	INTINO1	00272	INTINSW	00312
INTINO2	00315	INTBSTOR	00321	INTINO29	00323
INTINO3	00325	INTINO35	00327	INTINO4	00332
INTINO5	00335	KILLOUT2	00340	KILLOUT3	00343
COMPROCOO	00350	COMPROCO9	00373	COMPROCO8	00407
CCMPROCSW	00422	COMPROCO7	00432	COMPROCO6	00442
COMPROCO1	00444	COMPROCO2	00451	BUFLMT	00453
MCP86STCR	00455	MCPB7STOR	00456	COMPROCO3	00460
CCMPROCO4	00475	SPACERITE	00524	SPACEO1	00535
BUFCUTWC	00537	BUFINWO	00540	CRBUF	00541
LFBUF	00542	DELBUF	00543	ATTNBUF	00544
STOPBUF	00545	CROUT	00546	HOKBUF	00547
CRBUFIN	00550	LFBUFIN	00551	BOTOEL	00552
BCTCR	00570	TOPDEL	00576	TOPCR	00576
LFIN	00600	BOTATN	00602	TOPATN	00604
BCTCK	00605	BOTSTOP	00617	TOPSTOP	00621
CRCCMP	00622	LMTCOMP	00623	WESTIN	00624
WESTOUT	00630	WESTCHAR	00652	WESTCONV	00656
WESTOUTWC	00676	WEST84STOR	00677	WEST85STOR	00700
WEST86STOR	C0701	WESTB7STOR	00702	WESTUPCS	00706
WESTLRCS	00715	RJPTTYIN	00725	FOBUFCNT	00726
TTYCUTWC	00727	CASESET	00730	WESTASTOR	00731
WESTQSTOR	00732	WESTOUTBF	00733	INFORMINT	00734
INFCO	00751	INFO1	00753	INFO2	00761
INERRX	00764	INB5STOR	00765	INFO3	00767
INFC31	00776	INFO4	01001	INFO5	01005
INFC6	01006	INFO7	01010	INFOB	01012
INCCOTBL	01014	TEST	01025	STORE	01036
LMTCHK	01036	INPUTA	01047	INPUTA1	01053
INPUTA1A	01063	INPUTA2	01065	INPUTA3	01071
INPUTA5	01075	INPUTLA	01077	INPUTLA1	01104
INPUTLA3	01106	INPUTNA	01107	INPUTNA1	01114
INPUTNA3	01116	INPUTMA	01117	INPUTMA1	01124

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LABEL	LOC	LABEL	LOC	LABEL	LOC
INPUTMA3	01126	DECIN	01127	HOCTIN	01140
NUMIN	01151	NUMOO	01160	NUMO1	01171
NUMC2	01175	NUMO3	01220	NUMO4	01230
NUMC5	01232	NUMOB	01236	NUMERR	01241
NUMC6	01243	NUMO7	01245	SPECIN	01247
SPECO1	01254	SPECO3	01270	SPECO2	01271
YESIN	01273	YESOO	01275	YESO1	01307
YESC2	01312	YESO3	01315	FLOATIN	01321
FLCATIN1	01325	FIXIN	01330	FIXIN1	01335
FIXIN2	01336	FXPREPEN	01341	FX1	01366
FX2	01404	FXERR	01412	FXB4STOR	01412
FXB5STOR	01413	FXCR	01415	FXCR1	01420
FXCR3	01423	FXCR2	01425	FXCR4	01430
FXCRF7	01434	FXPER	01443	FXPER1	01445
FXPER2	01447	FXDIG	01453	FXDIG1	01454
FXDIG2	01457	FXOIGF	01471	FXDIGF1	01500
FXDIGI	01504	FXE	01520	FXE2	01522
FXE1	01524	FXSIGN	01536	FXSIGN1	01540
FXSIGN2	01547	FXSIGN3	01551	SIXTIES	01557
NUMSTR	01560	STRING	01567	STRINGO1	01575
STRINGO2	01577	STRINGO3	01603	STRINGO4	01607
STRINGO5	01612	STRB5STOR	01615	FLTSTR	01617
NOLMT	01630	DECLMT	01634	DECLO1	01643
DECLO2	01651	HOCTLMT	01653	HOCTLO1	01662
HCCTLO2	01666	FIXLMT	01670	FIXLO1	01677
FIXLO15	01706	FIXLO2	01710	FLTLMT	01712
FLTLO1	01721	FLTO3	01726	FLTLO2	01731
NUMLMT	01733	NUMLMTO1	01744	FLTNUMLMT	01751
FLTLOLMT1	01760	FLTLOLMT3	01771	FLTLOLMT2	01777
FLTUPLMT	02001	FLTUP1	02005	FLTUP2	02016
FLTNUMEU	02020	FLTNUMEL	02023	FLTNUMGX	02026
LMTSTR1	02030	LMTSTR2	02044	LMTSTR3	02057
PUTFORMINT	02072	PUTO1	02075	PUTO2	02101
PUTC25	02107	PUTERRX	02112	PUTO3	02114
PUTC4	02122	PUTO5	02126	PUTO6	02136
PUTC7	02145	PUTO71	02155	PUTO8	02164
CHARO	02175	PUTCOOTBL	02176	GREEKCONV	02203
GREO1	02227	PUTPREP	02235	PPA	02273
PPAC	02277	PPA1	02306	PPA2	02316
PPA3	02317	PPA4	02330	PPB	02352
PPBO	02356	PPB1	02364	PPB3	02372
PPB4	02374	PPB5	02375	PPB6	02406
PPC	02407	PPCOO	02417	ZROSUPINT	02421
PPCC	02422	PPC1	02426	PPD	02436
PPD1	02444	PPO2	02445	PPE	02455
PPE1	02460	PPE2	02463	PPE3	02472
PPERREXIT	02473	PPFINAL	02476	PPB4STOR	02502
PPB5STOR	02503	PPB6STOR	02504	BUFFSTORE	02506
BINDECINT	02514	BINDECINT1	02525	BINDECINT2	02526
BINDECINT3	02542	INTOCTBIN	02543	INTOCTBIN1	02547
INTOCTBIN2	02550	INTOCTBIN3	02566	INTOCTBIN4	02567

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LABEL	LOC	LABEL	LOC	LABEL	LOC
INTCCTBIN5	02572	BINOCTFLO	02573	BINOCTFLO1	02576
BINCCTFLC2	02577	INTBCDBIN	02607	INTBCDBIN1	02614
INTBCDBIN2	02615	INTBCDBIN3	02634	INTBCDBIN5	02640
FRABCDBIN	C2641	FRABCDBIN1	02650	FRABCDBIN2	02677
FRABCDBIN3	02701	FRABCDBIN4	02702	BINDECFRA	02703
BINDECFRA1	02713	BINDECFRA2	02714	SUPZRO	02726
SUPZRO1	02736	SUPZRO2	02737	SUPZRO3	02747
SUPZRO4	02754	SUPZRO5	02760	SUPBSTOR	02761
CCFRND	C2763	COFRND1	02774	COFRND2	02776
CCFRND3	C3000	COFRND4	03007	COFRND41	03012
CCFRND5	03015	COFRND51	03025	COFRND52	03032
CCFRND6	C3035	COFRND7	03040	COFRND8	03044
CCFRND81	03053	COFRND9	03056	COFRND10	03062
CCFRND11	03065	HIBIT	03071	SIXTY	03072
SIXTYFIVE	03073	M6L	03074	SEVENTYONE	03075
BIT5	C3C76	SPACES	03077	CINFIX	03100
CINF1	03106	CINFSTRP	03110	CINF21	03134
CINF30	03155	CINF3	03175	CINFCALL	03201
CINFTP3	03212	CINFXT1	03225	CINFXT	03231
CINFMSK	03232	CINFERR1	03233	CINFERR2	03234
CINFERR3	03235	COFFIX	03240	COFF1	03253
CCFFTEM1	03271	COFFTEM2	03272	FXCODE	03274
CINFLT	03275	CNFLT	03345	CNFLNON	03351
CNFLNONC1	03355	CNFLNON1	03365	CNFLNON2	03375
CNFLTO1	03402	CNFLTO11	03406	CNFLT11	03413
CNFLT12	03417	CNFLT3	03422	CNFLTXT	03424
CNFLTERR1	03431	CNFLTP1	03432	CNFLTP2	03433
CNFLTPSIN	03434	CNFLTP3	03435	CNFLTP4	03436
CNFLTP5	C3437	CNFLTP6	03440	COTFLT	03441
CCT1	03467	COT11	03500	COT2	03510
CCT3	03513	COT4	03523	COT5	03526
CCT6	03535	COT7	03546	COTXT	03577
CCTNEG1	03604	COTNEG11	03616	COTNEG2	03626
CCTNEG3	03631	COTNEG4	03641	COTNEG5	03647
SINTEMP	03657	MTEN1	03660	MTEN2	03662
MTEN3	03664	MTEN4	03666	MTEN5	03670
MTEN6	03672	MTEN7	03674	MTEN10	03676
MTEN11	03700	MTEN12	03702	MTEN24	03704
MTEN36	03706	MTEN50	03710	TEN	03712
TEN1	03714	TEN2	03716	TEN3	03720
TEN4	03722	TEN5	03724	TEN6	03726
TEN7	03730	TEN10	03732	TEN11	03734
TEN12	03736	TEN24	03740	TEN36	03742
TEN50	C3744	ERROR	03746	ERROR1	03757
ERROR1A	03763	ERROR2	03767	ERROR2A	04005
ERROR2B	04011	ERROR4	04013	ERROR4A	04014
ERRCR5	04024	ERROR51	04037	ERROR52	04040
ERRCR5A	C4C45	ERROR5B	04046	ERROR53	04052
ERROR5E	04054	ERROR5C	04061	ERROR50	04063
ERRCRSW	04064	ERROR6	04066	ERROR6A	04077
ERRCR6B	04100	ERROR6C	04101	LIMIT	04104

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LABEL	LOC	LABEL	LOC	LABEL	LOC
HSPOUT	04115	LIN2	04117	LOCHAR	04122
LINSW	04145	HSPOUTFIN	04152	PRPARAM	04157
CRSW	04162	HSPOUT1	04166	HSPGIN	04172
HSPATTN	04204	ATTEN	04215	HSPACC	04216
ACCPT1	04231	HSPNOTACC	04233	HSPNOT1	04237
NOTACC1	04247	HSPERRMESS	04252	HSPEM1	04265
ERRMESSFIN	04300	HSPIN	04306	HSPIN1	04324
HSPIN2	04333	INCHAR	04335	INCHAR3	04341
INCHAR1	04352	INCHAR2	04362	PRINTLIN	04363
HSPRNT	04370	PRINTSW	04402	SLOTSTOR	04403
HSPBUF	04404	HSPQSTOR	04550	HSPASTOR	04551
HSPB2STOR	04552	HSPB3STOR	04553	HSPB4STOR	04554
ERRCNT	04555	ERRBUFWD	04556	BINLMT	04557
CONVERT	04560	NUMDIG	04561	INFS1	04562
PUTS1	04563	PUTS2	04564	QSTORE	04565
CPASTOR	04566	CPQSTOR	04567	MCPASTOR	04570
MCPQSTOR	04571	INTASTOR	04572	INTQSTOR	04573
ACTIVITY	04574	BUFSLOT	04575	SPECTBLS	04576
BUFIN	04577	BUFFCOUNT	04600	PPADDR	04601
CODE	04602	GAMMA	04603	BETA	04604
INTEGER	04605	FRACTION	04606	SIGN	04607
NOINTS	04610	EXPONENT	04611	FPFRACTION	04612
IOINTEGER	04613	IOFRACTION	04615	IOEXPONENT	04617
EXPSIGN	04620	RJPIN	04621	RJPOUT	04622
BUFFER	04743	TTYBUF	05417	TTYTBL	06073
TTYTBLL	06133	MCPINIT	06173	DRIVER	06174
MCP	06202	MCPSW	06206	MCP2	06212
TEMP1	06217	TEMP2	06220	FLTPT	06222
FP1	06231	FP4	06232	FP5	06233
FP6	06234	FP7	06235	EFP	06237
ADD	06261	POS	06277	SFT	06307
SFT1	06310	MTR	06314	MTR1	06315
SUB	06320	MPL	06330	DIV	06342
SCL	06362	NEG	06375	AQR	06404
ZERO	06417	SCL1	06422	SCL2	06423
SET	06426	FXTOFL	06430	FLTOFX	06440
FLTOFX1	06452	FLTOFX2	06455	TYPE	06463
PUNCH	06465	WS	06467	WS1	06470
WS2	06471	WS3	06472	WS4	06473
WS5	06474	WS6	06475	WS7	06476
WSIC	06477	WS11	06500	WS12	06501
WSI3	06502	WS14	06503	WS15	06504
WS16	06505	RZERO	06506	SQR	06511
SQRT1	06560	SQR1	06562	SQR2	06567
SQR3	06573	SQR4	06577	ATAN	06603
ATAN1	06611	ATAN2	06623	ATAN3	06644
ATAN5	06655	EXP	06663	EXP1	06673
EXP2	06700	EXP3	06703	EXP4	06705
EXP5	06717	EXP6	06726	EXP7	06737
EXP10	06742	AERR1	06754	A$$$$$1112	06760
A$$$$$I111	06764	AERR2	06774	FPSTOP	07007

..... SPURT OUTPUT NO. 212 .....

NTERCOM AOAMS-ASSOC•7/1/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
ERR	07011	AERR	07014	ADOFL	07020
S8DFL	07022	MLOFL	07024	DVOFL	07026
ERR11	07030	ERR12	07031	ERR13	07033
ERR14	07034	ERR15	07036	ERR16	07037
ERR16A	07041	ERR10	07043	ERR17	07044
ERR20	07046	ERR21	07050	ERR22	07052
ERR23	07054	ERR24	07056	ERR25	07060
ERR26	07062	ERR27	07064	ERR40	07066
LERR	07070	ERR2	07075	ERR3	07076
ERR4	07100	ERR5	07101	ERR6	07103
ERR7	07104	ERR30	07106	ERR31	07110
ERR32	07112	ERR33	07114	ERR34	07116
ERR35	07120	STARTREAD	07122	POW14	07124
ASIN	07125	HERE	07137	ASIN1	07147
ASIN2	07211	ASIN3	07215	ASIN4	07274
ASIN5	07303	ASINK	07313	ASINP	07322
ASINQ	07326	ACOS	07331	ACOS1	07350
LOGE	07354	LOGE1	07410	LOGE1A	07427
LOGE2	07445	LOGE3	07461	LOGER	07465
LOGEA	07471	LOGEF	07477	LOGEK	07507
LOGES	07517	LOGEM	07523	SAVE	07533
COUNT	07534	SIN	07535	SINCOS1	07551
SINCOS2	07561	SINCOS6	07615	SINCOS7	07627
SINCOS10	07633	SINCOS11	07635	SINCOS20	07642
COS	07644	SINCOS8	07663	ID1CELCOR	63000
ID2CELCOR	63001	RA	63002	DEC	63003
SRA	63004	SDEC	63005	RADIUS	63006
RADOT	63007	DECDOT	63010	RADIUSDOT	63011
SIDERTIME	63012	VIZRA1	63013	VIZDEC1	63014
VIZRA2	63015	VIZDEC2	63016	TWOSECOOP	63017
ID1RADCOR	63050	ID2RADCOR	63051	RANGE	63052
AZIM	63053	ELEV	63054	SAZIM	63055
SELEV	63056	CRANGE	63057	CAZIM	63060
CELEV	63061	RANGEDOT	63062	TRUERANGE	63063
SINORIENT	63064	COSORIENT	63065	SINAZEL	63066
CCSAZEL	63070	ACQAZIM	63071	ACQELEV	63075
FRAMESIZE	63101	RADIOMETER	63102	TIMEMODE	63103
FIRSTELEV	63104	ASTRORA	63105	ASTRODEC	63106
TIMECORR	63107	KYBROLEVEL	63110	TTYSTATUS	63111
RECORDSIZE	63112	CELBODY	63113	IOITIME	63130
ID2TIME	63131	TRUETIME	63132	CELTIME	63133
SCELTIME	63134	CONVERTIME	63135	SRADTIME	63136
HOURMINUTE	63137	SECONDS	63140	OSECONDS	63141
ACTUALTIME	63142	ESTSHIFTED	63143	GMTSHIFTED	63144
GMTMODU24	63145	BLASTOFF	63146	YEARMONTH	63147
DAY	63150	HOURREG	63151	MINREG	63152
FIRSTHRU	63153	DUMSECTTG	63154	RECROSWTCH	63155
RELEASESW	63156	IO1RECRD	63210	IO2RECRD	63211
RECFILE	63212	IO1SYSPAR	63310	IO2SYSPAR	63311
RADARMODE	63312	SYSTAT1	63313	SYSTAT2	63314
SYSTATD	63315	DELTATEE	63316	FREQUENCY	63317

..... SPURT OUTPUT NO. 212 .....

NTERCOM ADAMS-ASSUC•7/1/65

LABEL	LOC	LABEL	LOC	LABEL	LOC
LENGITUDE	63320	GEODETLAT	63321	GEOCENLAT	63322
ECUATOR	63323	POLE	63324	AZIMOVER	63325
HEIGHT	63326	YRTRAV	63327	ZRTRAN	63330
SKIP	63331	MSFREQ	63332	WFFREQ	63333
MAINSWITCH	63334	VELOFLIGHT	63335	LSPERAU	63336
FLATTENING	63337	NMPERAU	63340	AUPEREQUAT	63341
KMPERNM	63342	EXPNAME	63350	IO1ENTPNT	63410
IO2ENTPNT	63411	MCPGM	63412	INTER	63413
CCCCN	63414	RECRD	63415	ADSCN	63416
AESCN	63417	CURCT	63420	DYDMP	63421
CHCOR	63422	PRLOG	63423	CELCOMPGM	63424
DATANALYZE	63425	INTERCOM	63426	ACQUI	63427
RCMTR	63430	CHPAR	63431	WFORD	63432
RCXXX	63433	PLANP	63434	TIMEP	63435
PLOTP	63436	IO1RADIO	63440	IO2RADIO	63441
AZIMADD	63442	ELEVADD	63443	DOPPADD	63444
RANGEADD	63445	INAZIMADD	63446	INELEVADD	63447
WFADD	63450	MILLSTNADD	63451	SYSCOMREG1	63452
SYSCOMREG2	63453	SYSCOMREG3	63454	SYSCOMREG4	63455
SYSCOMREG5	63456	SYSCOMREG6	63457	INTERLCKSW	63460
PREVIOUSTM	63461	BOOYSIZE	63462	AZELBXSCAN	63500
AZMTHSCAN	63501	ELVTNSCAN	63502	RADCBXSCAN	63503
RASCTNSCAN	63504	DECLTNSCAN	63505	ROTATERADN	63506
RCTATEAEBX	63507	ROTATERDBX	63510	HOLDNOHULD	63511
AZIMUFFSET	63512	ELEVOFFSET	63513	RADFFSET	63514
DECOFFSET	63515	CRSSOFFSET	63516	ALNGOFFSET	63517
TIMETOHOLD	63520	PERIODELEV	63521	ARCOFELEV	63522
PERIODAZIM	63523	ARCOFAZIM	63524	PERIODDEC	63525
ARCOFDEC	63526	PERIODRA	63527	ARCOFRA	63530
RADECOTIME	63531	AZELOTIME	63532	RADIORA	63540
RADIODEC	63541	SYNCTIMING	63542	IO3RADIO	63776
IO4RADIO	63777	AZIMOUT	64000	IO5RADIO	64776
IO6RADIO	64777	ELEVOUT	65000	IO7RADIO	65776
IO8RADIO	65777	DOPPOUT	66000	IO9RADIO	66776
IO1ORADIO	66777	RECAZIM	67000	IO11RADIO	67776
IO12RADIO	67777	RECELEV	70000	IO13RADIO	70775
IO14RADIO	70776	RANGEOUT	70777	MCPFILLER	71000
IO15RADIO	71776	IO16RADIO	71777	INTERAZIM	72000
IO17RADIO	72776	IO18RADIO	72777	INTERELEV	73000
IO19RADIO	73776	IO20RADIO	73777	INTERDOPP	74000
IO21RADIO	74776	IO22RADIO	74777	AZIMIN	75000
IO23RADIO	75776	IO24RADIO	75777	ELEVIN	76000
IO25RADIO	76775	IO26RADIO	76776	INTERRANGE	76777
IO1SYSENT	77576	IO2SYSENT	77577	SYSENTRIES	77600
IO1SYSNAM	77676	IO2SYSNAM	77677	SYSNAMES	77700

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13. ABSTRACT

The Intercom program in the Haystack pointing system provides communications between the pointing system and an experimenter at Haystack using the console keyboard-typewriter. A user at the Millstone or the West Ford site may also direct the pointing system via a teletypewriter. The structure of the program, the calling sequence for it, and the conventions affecting the operator are described.

14. KEY WORDS

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